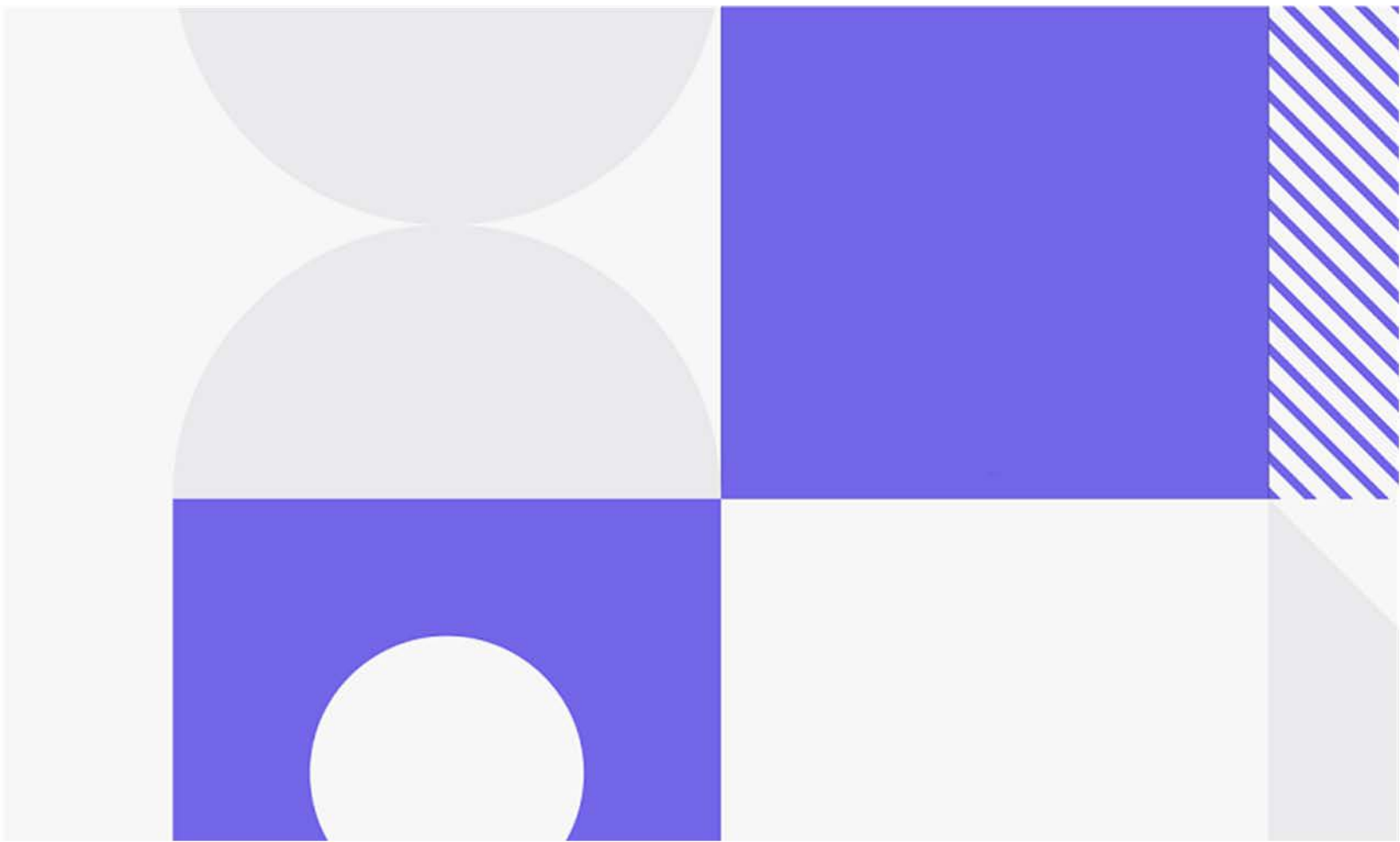


Dimensions RM

Software version: 25.4 (13.1)

User Guide



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Preface

This document describes how to use the RM Browser client for Dimensions RM, a comprehensive requirements management package that allows development teams to capture, engineer, and manage requirements throughout the product lifecycle.

Objective

The purpose of this document is to describe how to use Dimensions RM after the product is installed.25.2 (13)

Audience

This document is intended for members of the organization who use Dimensions RM to create, manage, and track requirements during the product lifecycle.

Contacting Technical Support

Open Text provides technical support for all registered users of this product, including limited installation support for the first 30 days. If you need support after that time, contact Open Text Support at the following URL and follow the instructions:

<http://supportline.microfocus.com>

Language-specific technical support is available during local business hours. For all other hours, technical support is provided in English.

The Open Text Support web page can also be used to:

Report problems and ask questions.

Obtain up-to-date technical support information, including that shared by our customers via the Web, automatic e-mail notification, newsgroups, and regional user groups.

Access a knowledge base, which contains how-to information and allows you to search on keywords for technical bulletins.

Download fix releases for your Open Text products.

License and Copyright Information for Third-Party Software

For license and copyright information of third-party software included in this release, check the file `Third_Party_Licenses.txt`, which can be found in the Dimensions RM installation directory, e.g. `C:\Program Files\Open Text\Dimensions 25.2\RM`.

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Functionality Overview

Requirements help to ensure that product development goals are met. Dimensions RM provides the facilities to make that happen.

With Dimensions RM, the organization is able to:

- Import requirements from stakeholders collected via Word documents or spreadsheets
- Maintain requirement information using local naming conventions
- Create, update, replace, and retire requirements
- Review and revise requirements under history control
- Create and traverse links between requirements
- Trace the initial request through to its distribution
- Assess change impact
- View and clear links considered "suspect"
- Document end-to-end traceability
- Prioritize requirements
- Track discussion threads
- Support a comprehensive workflow process tracking both status and approval
- Communicate status using report wizards to create dashboards and graphical reports
- View, create, and modify requirements and chapters in a hierarchical document structure
- Baseline requirement releases
- Support variants through parent/child documents and/or release branching
- Review and merge changes from variants
- Export documents to Microsoft Word, Excel, PDF or ReqIF
- Publish Roundtrip Documents to submit for review and re-submission
- Utilize test management to verify and validate system requirements
- Increase Test Suite flexibility through the use of Test Parameters
- View the history of a requirement or a document
- Provide facilities for notification via email or targeted user alerts
- AI Integrations to assist in requirement review and Test Case creation

Common Terms

The following section provides a detailed description of the most important terms. These and other RM related terms are included in the ["Glossary" on page 923](#).

- **Requirements**

Dimensions RM is a requirements management solution. Be they Customer Requirements, Software Requirements, Design Statements, Test Cases, or Defects, organizations use RM to define the classes that will store the data relevant to each type, as well as the relationships that connect them. Throughout this documentation, we often refer to the objects stored within RM as requirements, because each object expresses a need within the requirements management process. For an overview of displaying requirements, see ["Methods for Listing Requirements" on page 100](#).

- **Attribute**

An attribute is descriptive metadata, beyond the core statement, that simplifies reporting and helps manage each requirement throughout its lifecycle. Attributes define the RM Classes; they are stored as text, in lists, or in any one of the available formats, see ["Attribute Types" on page 534](#).

- **Baseline**

A baseline is a labeled frozen set of requirements. Creating baselines from a collection or the content of a document ensures that the object versions, as well as the links shared among them will not change. Baselines remain available for comparison or reporting, see ["Managing Baselines" on page 373](#).

- **Branch**

Branching provides support for parallel development. The Branch Action enables projects to be maintained for an interim release and then merged back into the main product or shared with alternate projects for controlled customization, see ["Branching and Merging Requirements" on page 197](#)).

- **Categories**

Categories work like folders on a file system, assisting in the management and access of requirements by component or functional area. Group permissions are assigned through categories.

Categories are represented by a hierarchical structure within each Dimensions RM instance, with sub-categories supported.

For further details about categories, see chapter ["Managing Categories" on page 517](#).

- **Collection**

A labeled set of associated objects gathered from one or more types (classes). Collections provide methods for organizing requirements for use in integrations, standard reporting, in building graphical reports, for release tracking or for a user to keep track of the items they are currently working on, see ["Managing Requirements in a Collection" on page 368](#).

- **Parent Collection**

Parent Collections are labeled sets of objects, created and populated from one or more containers (collections, baselines, documents and snapshots). A parent collection, identified by the term "(parent)" in its description, will reflect any changes made to the containers from which it was populated, see ["Working with Parent Collections" on page 376](#).

- **Container**

Container is the term applied to the various labeled sets of requirements: • [Collection](#), • [Baseline](#), • [Documents](#), or • [Snapshot](#). The content of Containers is not restricted by requirement types and may span the entire instance.

- **Documents**

Documents provide the capability to import requirements and structure or to arrange requirements into chapters and subchapters with free-form text added as description. Working in documents allows users to create and publish reports such as versioned system or software requirement specifications. For further information, see ["About Documents" on page 212](#).

- Parent Document

Documents created with the intention of managing a common structure and content can be created as Parent Documents; their structure and content are inherited by each child created based on the parent. For further information, see ["Parent and Child Documents" on page 231](#).

- Merge

The Merge action (formerly Synchronize) allows users to combine changes made in branched objects. The merge includes the ability to compare, review, and address conflicts. For more information, see ["Merging Branches" on page 205](#).

- Reports

The input to reports consists of lists of objects, filtered according to needs. The output can take many forms: detailed listings, requirement traceability from request to test, progress reports displayed graphically, or complex trend reports. Dimensions RM report wizards have been developed to help users track, understand, and disseminate status, see ["Working with Reports" on page 333](#).

- Scripting

Database information may also be queried using a SQL-like script language; for more information see, ["Customizing and Scripting" on page 619](#).

- Snapshot

A snapshot is a frozen version of a document. Document snapshots are typically created prior to distribution. The compare facility provides the ability to include a cover sheet detailing the changes between snapshots, enabling reviewers to focus on the changes, see ["Document Snapshots" on page 282](#).

Sample Instances

Four sample instances are included with each Dimensions RM distribution. Each with its own set of features, these samples provide a convenient way to get acquainted with the features of Dimensions RM. The samples can also be used by veterans to submit questions or issues using an instance that can be reproduced by support.

These samples are available to a Dimensions RM System Administrator for installation and access by the user community. They should never be used as a basis for creating a production instance.

The instance samples are:

QLARIUS_RM - uses a simple process for managing requirements for a fictional insurance company.

RMDEMO - uses a fictional photo-sharing application. This sample extends the basic process to include workflow initiated using Engineering Change Proposals (ECPs). RMDEMO also introduces product branching capabilities.

ALM_DEMO - uses ePhoto to demonstrate the use of the workflow process, and as the use of Test Cases.

AGILE_RMDEMO - uses the same photo sharing application to include a rich set of Agile Dimensions RM features and functionality.

Introduction to the User Interface

The Main Menu Bar

The **Main Menu Bar** provides access to functions and features through a series of menus and dialogs. The functions listed may change depending on the process implemented within the instance or the individual user's needs.



The Main Menu Bar		
Icon	Function	Description
CE 25.4	Identifies the Open Text Dimensions RM Release.	25.2 indicates the version of RM released in the second quarter of 2025. For those veterans who have been following RM Releases for years, this equates to Dimensions RM 13. For complete details concerning your implementation see "Getting Help" on page 63 .
Home	Return to the Home View	Returns the user to the Home View. For more information on the Home View, see chapter "Working with the Home View" on page 295 .
New	Drop-down for new object creation	This menu opens the dialogs used to create new objects, including requirements, reports, documents, collections, and baselines.
Views	Drop-down listing Quick Search and related views.	The Views menu provides access to Quick Search (The Quick Search View). From this view, users can scan the pool of objects and apply filters for collecting, reviewing, editing and exporting requirements. Also available from the Views menu is access to Split View drag-and-drop linking (see Linking Existing Requirements through Split View).
Agile	If Agile enabled -Accesses Agile functions and status.	The Agile functionality included with RM is optional. If enabled, this button will be available on the Main Menu to take users to the Agile pages (see Agile Basics).
Test	If Test-Management enabled - Accesses Test based functions and status.	The functionality associated with testing is optional. If enabled, this button will be available on the Main Menu to take users to Working with Test Management .
On the Right side of the Main Menu Bar:		

The Main Menu Bar		
Icon	Function	Description
	Global Search	Click the Global Search icon to explore the instance. The dialog can search the instance for any attribute or term requested. This function examines requirements, or the titles of any report, document, collection or baseline.  See Global Search .
	UI Alerts	The Notification Flag, with a number indicating messages to be read. These messages concern objects the user is following or Rules that have been enabled (see Enabling and Disabling Notifications).
	Import Dialogs	The Import menu accesses available import dialogs including: Excel/CSV, Microsoft Word, XML and ReqIF. Content is imported into RM requirements and/or Documents. See Importing Requirements .
	Administration Dialogs	The wrench or spanner icon opens the Administrator menu. From these dialogs, the Instance Administrator or Power User can manage categories, define classes, add attributes, and define default behavior. See About Instance Administration .
	User initials access User Settings	This small circle provides access to various dialogs including Help, User Settings, Notifications, About and Log Out (see User Menu)

The Breadcrumb Bar

The **Breadcrumb Bar** appears directly below the Main Menu Bar on all pages. This row of clickable links informs users of their position within the category structure and, if a document or report has been opened, which one it is (further detail contained in [The RM Instance Breadcrumb](#)).

RMDEMO ▾ ➤ 📁 RMDEMO\Quality\Safety

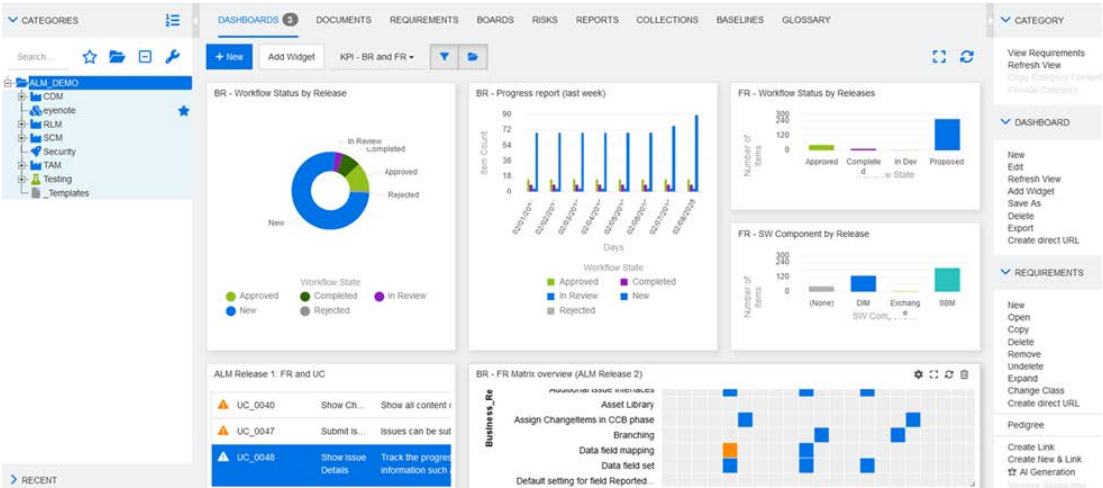


Figure 1-1. The Home View Tab Bar with the Dashboard Selected

The Home View Tab Bar

Below the breadcrumb bar is the Tab Bar.

In the left pane reside the Categories, and on the right the Actions. Between the two are a number of columns (Tabs) listing objects identified by the Tab Title.



NOTE The Home Tabs

The tabs displayed are dependent on Instance Configuration and User Settings.

The creation, modification, and display information for each tab is described in "" on page 295.

The Panes and Tabs found on Home:

Pane or Tab	Description
Categories	The left pane of the Home View contains the Categories. Like folders on the file system, the Categories maintain a separation of content based on project or component, as well as the ability to control access to that content. For each user, the Category Structure lists all folders to which they have read or write access. The content of each selected category can be listed and reviewed through the Requirement Tab, by using Hierarchy Structure or both (see "Categories Pane" on page 31).
Dashboards	Based on wizard-generated graphical, trace, and text reports, the RM Dashboard provides a visualization of status and progress for a release, project, component, team or group. An unlimited number of dashboards can be configured to address key process indicators or personal status (see "Dashboards" on page 298).

Documents	The Documents Tab lists, with detail, available documents with associated snapshots. Once a document is selected and opened, the view presented is a document-like display of free-form text, images, and requirements, complete with a table of contents. Users can add, delete, move and edit chapters, subchapters and requirements (see "About Documents" on page 212).
Requirements	The requirements tab lists objects presented by category using standard RM Filters and distribution graphs (see "• Listing Requirements for Review" on page 98).
Boards	The optional Boards tab provides a facility to organize objects as cards within a workflow chart. The objects can be reviewed and transitioned within the boards (see "Boards Tab" on page 310).
Risks	An optional process to define and evaluate risks that could impact the product outcome (see "Risks Tab" on page 312).
Reports	The Reports tab lists both Public and Private reports of type Graphical, Class, Relationship, and Traceability. Reports are created using a wizard that leads users through the dialogs to generate exactly the input and output necessary (see "Report Basics" on page 334).
Collections	Collections are named groups of objects selected from one or more classes. The Collections tab lists existing collections defined for assignment, report input, review, or integration (see "Managing Requirements in a Collection" on page 368).
Baselines	Baselines are frozen groups of objects created using the content in a collection or Document. The Baseline tab lists existing collections defined for assignment, report input, review or integration (see "Managing Baselines" on page 373).
Glossary	The Glossary class provides a facility for maintaining a project or corporate list of terms accessible to documents or requirements. The Glossary tab lists all entries (see "Glossary Tab" on page 327).
Compliance	The Compliance tab enables users to define what it means to be in compliance within a given project or release based on selected Scope and applied Rules. For details, see "Compliance Tab" on page 315 .
Actions Pane	The Actions Pane appears on the right side of each view. In it are listed the commands available in the current context (see "RM System Attributes" on page 38).

General Navigation and Controls

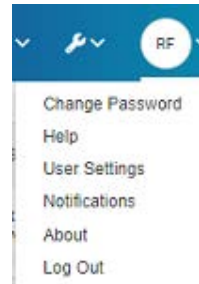
The following sections provide an overview of the main navigational and control elements included in RM:

- Access User Menu functions via the ["User Menu" on page 30](#).
- The RM Main Menu Bar is described in [Introduction to the User Interface](#).
- The Category location can be found in [The RM Instance Breadcrumb](#).
- Category Access and Structure is described in [Categories Pane](#).
- Ensure access to the most frequently used categories by using [Favorites](#).

- Choose a display from objects accessed recently [Recent Items Listing](#).
- Available functions based on context [RM System Attributes](#).

User Menu

The User Menu provides access to **Help**, user specific settings, and notifications. To access the menu, click into the initialed circle on the main menu bar.



The User Menu Includes:

Change Password: This opens the **Change Password** dialog for those using Dimensions RM login access, see ["Changing Your RM Password" on page 62](#).

Help: This opens the RM Browser help, see ["Getting Help" on page 63](#).

User Settings: This opens the **User Settings** dialog, where users can override the instance settings, e.g. which attributes are displayed in the **Quick Search** results, see ["Dimensions RM Basics" on page 21](#).

Notifications: This opens the **Notifications** dialog, where email and/or online alerts are enabled or disabled, see ["Enabling and Disabling Notifications" on page 63](#). Also listed on this dialog are objects the user has elected to **Follow**.

About: This opens the **About Dimensions RM** dialog, which displays the version of Dimensions RM installed as well as information concerning the server configuration. Including an image of the **About** page when raising a support issue will expedite the response. See ["Viewing Version and System Information" on page 66](#).

Log Out: End your RM Browser session with the **Log Out** dialog.

It is recommended that users log out of RM when work is complete, it will free up a license for colleagues.

The RM Instance Breadcrumb

The RM Instance Breadcrumb appears just below the menu bar; this displays your current RM path.

Standard Breadcrumb:

RMDEMO ▾ ➤ 📁 RMDEMO\Quality\Safety

- **Instance Name**

The left element displays the RM instance name. Clicking the down-arrow opens a list of available RM instances. Selecting another switches to that instance. For

details, see ["Switching to Another RM Instance" on page 62](#).

Each instance is managed within a database, to view the Database Name for the current RM instance hover over the instance name; the tooltip displays database and instance name.

- **Category Path**

The element to the right of **the folder icon** displays the full category path. RM Categories operate like folders on the file system, allowing teams to manage all RM Objects within defined structures.

In the example above, the path displayed contains:

- **RMDEMO:** (the instance name) the root category.
- **Quality:** a category managing objects directly under the root.
- **Safety:** the current location.

- **Database Name**

The name of the database may be included as part of the standard Breadcrumb. If included, it will appear to the left of the Instance name. This is generally only applied when users are frequently working in multiple databases.

The Breadcrumb Expands to include open Containers or Reports: _____

RMDEMO ▾ >  RMDEMO\Data ▾ > Report > Relationship > Component VCRM ▾

When a user opens a container (document, snapshot, collection, baseline) or a report the Breadcrumb is extended to include its name. In the image above, the Relationship Report, Component VCRM, was opened from the RMDEMO\Data.

As with the Standard Breadcrumb:

The RM instance name: e.g., RMDEMO

Category path: RMDEMO\Data

Open Container or Report: name of the open item *Component VCRM* in this example.

> Click to expand the selection within the object type.

To close an open Container or Report:

 Note that the x-icon located at the far right of the header line exits the open element.

Categories Pane

On the left side of the Home View resides the Categories pane. Within the Categories pane, you can view the full tree structure of Category folders. Select a category and then click on the Requirements tab to view its content.

The display can be expanded to include the requirement content of each category by switching to the Hierarchy.

Permissions are controlled through group assignment. Users without read permission to a category will not see it listed.

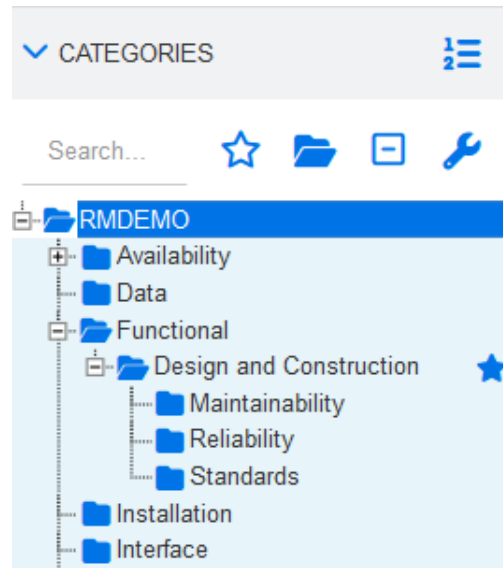


Figure 1-2. Category View, the Blue Star marks a favorite

To Move Objects Between Categories:

Select the object from relevant tab in Home View and drag the object onto the target category in either the category or hierarchy structure. A successful move will display a green check.

A failure to move an object into a different category could mean that you have no permission in the target.

Categories Header:

 **Switch to Hierarchy View:** The Hierarchy View lists the requirement within a defined structure within the Category tree. If the switch to the hierarchy view is made from a subcategory, the top of the visible tree will be set to that subcategory.

 **Switch to Category View:** In Hierarchy View, click this button to switch to Category View.

Category View - Search Line:

Search: Dynamically narrow the display to the characters entered.

This field limits the display in the category views to objects that match the search string. The search is dynamic, and increasingly narrows the display, matches are shown in bold. To return to displaying the full category tree, click the **X** button in the Search field.

Show Favorite Categories:

Toggles between Standard View and a view showing only categories marked as favorites.

Marking one or more categories as favorites is useful when working in a limited area of a large project. To mark a Favorite, hover over the category and click the star on the right.

Click the **"Show Favorite Categories"** Star to limit the display to favorites only. Click the star again to return to the Standard View.

Include sub-categories:

When the folder is open, this toggle indicates that requirements in sub-categories below the selected category will be included in lists. When closed only those in the selected category will be included.

Collapse all sub categories:

This button collapses the structure below the selected category. Categories containing subcategories are expanded using the  icon.

Wrench/Spanner:

Only Instance Administrators will see the Wrench icon at the end of this line. This icon opens the dialog to manage categories. For details see ["Managing Categories" on page 517](#).

To Choose Category or Hierarchy Default:

Users may choose to set the default view to either Hierarchy or Category in User Settings (see ["Home Settings" on page 73](#)).

Hierarchy View - Search Line:

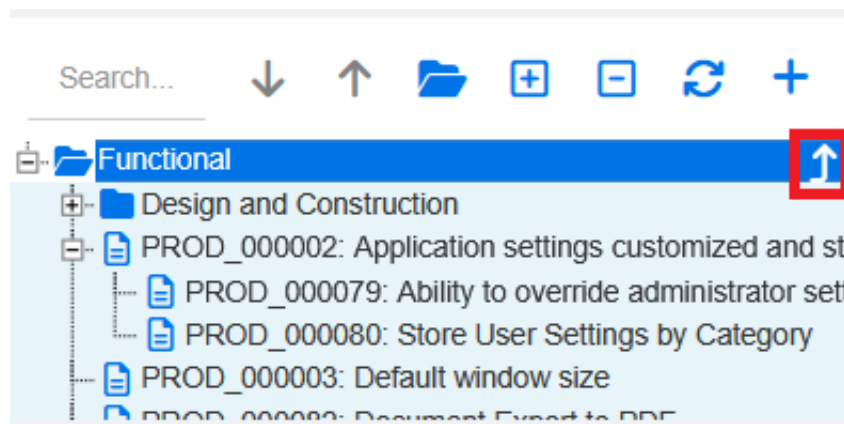


Figure 1-3. The Hierarchy View, lists categories as well as content

Up-arrow: Move up a category in the hierarchy.

This icon is only displayed when there are additional categories above your current setting.

Search: Search in the hierarchy for objects matching the string.

Enter the search string and hit return or click the search icon to locate matching objects; matches are shown in bold. When matching a parent, be it category, header or requirement, the child objects will be included in the response.

To return to the full hierarchy, click the X button in the search field.

Move down: Move selected object(s) down in the Hierarchy.

Requirements with children will move as a group.

Move up: Move selected object(s) up in the Hierarchy.

Requirements with children will move as a group.

<Hierarchy Parent> a **Special Attribute** ([Special Attributes](#)), maintains the location of an object in the hierarchy relative to its parent. When an object is moved, a new version is created, please see "[Viewing Requirement History](#)" on page 176. The <Hierarchy Parent>, like all attributes, can be included in listings, reports and documents.

 **Include sub-categories:** When the folder is open, this toggle indicates that requirements in sub-categories below the selected category will be included in lists. When closed only those in the selected category will be included.

This means that, if the Functional category (see [Figure 1-3](#)) is selected and this folder is closed, choosing the **Documents** tab in the Home View will list only those documents contained in the Functional category folder, but none of those in, for example, Design and Construction.

 **Collapse all sub categories:** This button collapses any open branches below the selected category. Categories containing subcategories are expanded using the  icon.

 **Refresh:** Reloads the list of requirements in Hierarchy View.

For information concerning requirement creation in the Hierarchy see "[Working with the Hierarchy View](#)" on page 111.

Copying the URL of a Category

The URL for a Category can be copied and pasted into an email or reference document. Applying the URL will open the Home View to the category path, with only the selected category tree displayed.

Saving the URL for ...\\ALM_DEMO\\RLM

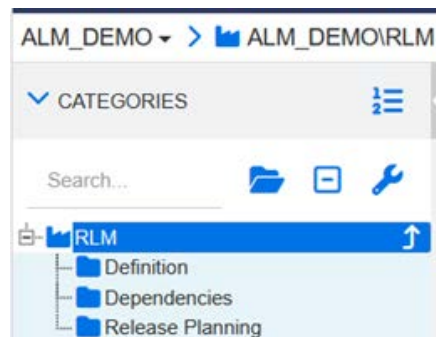


Figure 1-4. Click the URL to access the correct location.

This can be helpful when sending reviewers subsets of requirements from a large category tree.

To Copy the URL of a Category:

- 1 From Home, Categories pane, select a Category.
- 2 Select **Create Direct URL** from the Category set of the Actions pane.
- 3 Right-click on the URL labeled as the **Requirement Link**.
- 4 Click the Copy icon, copy the URL and click OK.

- 5 The URL is now available from the Windows clipboard.

Favorites

Marking Categories, containers, or reports as Favorites allows easier access to those most frequently used objects. Once you have marked your favorites, click the  at the top of the Categories Pane to limit the display to the favorites.

To add an item to Favorites:

- 1 Move the mouse pointer over the desired item.
- 2 Click .

To remove an item from Favorites:

- 1 Move the mouse pointer over the desired Favorite item.
- 2 Click .

Recent Items Listing

Below the Category/Hierarchy tree is the Recent Items list. The **Recent** list can be comprised of any or all of: documents, snapshots, requirements, reports, collections, or baselines. This list enables users to quickly re-select recently opened objects

To define the items in the Recent list, do the following:

- 1 **Hover over** the title of the Recent list to show the gear in the title bar.
- 2 **Click the gear** to open the **Settings** menu.
- 3 **Check the boxes** to the left of the items to be included in the list.
- 4 Click **OK**.

Note that changing the settings from Home View will override those selected in the **User Settings** dialog (see "[Recent Items](#)" on page 73).

Actions Pane

The Actions Pane appears on the right side of most RM views. In it are listed the commands accessible in the current context. For a complete list of Valid Actions from anywhere in RM, see "[Valid Actions](#)" on page 526.

- Actions are arranged in expandable/collapsible sections, e.g., Hierarchy, Documents, Requirements, etc.
- The Actions listed can be modified by selecting the pencil icon in each section heading (see "[Configuring Actions Pane Defaults](#)" on page 95).
- Actions available depend on user permissions, object(s) selected, and context.

If an action is grayed out, either you do not have permission to perform this action, or the action does not apply to the selected object(s). Execute Transition, for example, will be grayed out when highlighting an object from a class with no defined workflow.

- Actions available on Home View differ depending on the Tab selected.

In addition to the Actions listed in the right pane, a subset of requirement-related functions are available from the **Actions** menu located at the top right of an open requirement. See ["The Open Requirement Actions List" on page 105](#).

Opening the Full Interface

If an object (requirement, document, snapshot, collection, or baseline) is opened through a link received from a third party, you may have to log in before accessing the object.

As you log in, you may enable the **Also open full interface** option, which displays the navigation elements for the related view as well as the object you opened. For Single Sign On (SSO), the **Also open full interface** option is not available.

If the object has been opened with the limited interface (either because the **Also open full interface** option was not selected or due to SSO log in), click **Open in full view** in the top right corner of the screen to show the full interface.

Edit Attributes Dialog

Each object managed in RM, whether a requirement, test case, glossary or information object can be selected and opened using the **Open** action from the **Actions** Pane (see ["Editing a Requirement" on page 122](#)).

The RM objects are opened in forms segmented by attribute group. The segments can be locally customized; some typical segments include:

Available Transitions: If using Workflow, the next available transitions are displayed.

State History - If using Workflow, displays transition history and Category.

Standard - Displays Title, description, requirement ID, and current workflow state.

Custom Attributes - Properties determined by the organization to be relevant to the class, e.g., priority, target release, estimated effort, design status, or reviewer. The content of the default Custom Attributes section is managed by the users, as opposed to content controlled by the Dimensions RM.

System Attributes - Implicit attributes defined and maintained within RM, for example, who created or modified a requirement, what was added or modified, and when.

The remaining segments include: **attachments, comments, links, history, and containers**; these segments show counts when populated.

Each segment name is listed across the top of the form for easy selection and expansion.

The form header, defined by the Instance Administrator, can contain the Class Name, the Requirement ID, and/or the Title. The following header shows Requirement ID (BR_0121), and the Title.

BR_0121 - State and Progress of an issue shall be provided

ALL STANDARD CUSTOM SYSTEM ATTACHMENTS COMMENTS LINKS HISTORY POLLS CONTAINER

Available Transitions: Approve Return

> STANDARD ATTRIBUTES
> CUSTOM ATTRIBUTES
> SYSTEM ATTRIBUTES
> ATTACHMENTS
> COMMENTS
> LINKS
> HISTORY
> POLLS
> CONTAINERS

☐ Show navigation bar
☐ Close after save

Figure 1-5. Sample Open Business Requirement Form

System Attributes

System or Implicit attributes are those defined and managed by Dimensions RM, for example: who created the object, when it was created, its status, and everything you would like to know about its change history.

The following list the system attributes listed in the expanded System Attributes section of all open dialogs.

Display Name	Internal Name	Description
Created By	CREATED_BY	Shows the user ID of the person who created the version of the requirement.
Current Status	STATUS	Shows the status of the requirement, e.g. Current, Replaced, Proposed.
Initial Created By	INITIAL_CREATED_BY	Shows the user name who created the first version of the requirement.
Initial Time Created	INITIAL_TIME_CREATED	Shows the date and time when the first version of the requirement was created.
Modified By	MODIFIED_BY	Shows the user name who updated or replaced the current version of the requirement.

Display Name	Internal Name	Description
Notification	RTM_NOTIFICATION	Indicates the configuration status of e-mail or UI notification, see "Notification Settings" on page 89 . Possible values: Yes: Enabled No: Disabled If no value is specified, notification has not been configured.
Object ID	OBJECT_ID	Shows the ID for the requirement.
Object Version ID	OBJECT_VERSION_ID	Shows the version count for the requirement. Each "Save" operation increases this ID.
Proposals	PROPOSALS	The number of proposals (Action Propose New or Propose Change) related to a requirement in status Proposed. This attribute can be used when creating filters or reports. Use the clickable Special Attribute <Proposals> to open the Accept/Reject Proposals Dialog. For details, see section "Reviewing a Change Request" on page 137 .
Requirement Link	REQUIREMENT_LINK	A link which allows you to access the requirement directly.
Suspect	SUSPECT	Shows if a requirement is considered suspicious. See chapter "Suspect Links" on page 158 for more information.
Time Created	TIME_CREATED	Shows the date and time the current version of the requirement was created.
Time Modified	TIME_MODIFIED	Shows the date and time the requirement was updated or replaced.
<May vary>	PUID	The PUID is a persistent unique identifier. It is often prefixed, e.g. MRKT_ for "Marketing Requirement".

Table 1-1. RM System Attributes

Quick Search Views and Filters

Quick Search (QS), available from under **Views**, provides access to the pool of objects in the instance to which the user has, at a minimum, read permission.

In Quick Search, as well as in the Home View Requirements tab, users may develop filters to scan the entire pool of thousands or tens of thousands of objects. The filters limit the view to include attributes containing specific content, requirements created after or before

a given date, and/or by a specific user. Any combination of attribute selection can be used to find the requirements you are looking for..

The filters are created, modified and selected for use in both Quick Search and Home View.



Figure 1-6. List Current (latest) versions of High Priority Business Requirements Last Modified by Julia.

Each time the search criteria is modified:

Be sure to click  to refresh the search.

Saving, Printing, or Exporting a List

- Save the List Results:

Search results can be saved to a file using **Export** from the **Category** set in the **Actions** pane. Excel is the default, however a list of alternate formats is available for selection (see ["Exporting Requirements" on page 141](#)).

- Print the List Results:

Select **Print to fit** from the **Category** set on the **Actions** pane. A dialog opens with the content formatted for printing.

- Baseline the List Results:

Select **Baseline** from the **Category** set on the **Actions** pane. A dialog opens to assist in creating a frozen and labeled list of the list content (see ["Creating a New Baseline" on page 374](#)).

Details concerning the Quick Search View and all associated functionality can be found in ["The Quick Search View" on page 183](#).

Using Columns and Properties to Change the Display

Using the  **Columns** Icon

Clicking **Columns** from **Quick Search** or Requirement lists in Home View, will open the User Settings, Quick Search dialog to allow users to modify the attributes displayed for each selected Class, see ["Choosing the Attributes to Display" on page 40](#). See ["Sorting Order List" on page 40](#) for the order in which the requirements are listed.

Using  **Columns** from Home View for Containers

From **Home** View Container Tabs (Documents, Reports, Collections, or Baselines) **Columns** provides access to the object properties available for display as well as to additional options for each Container.

Display Options

Selecting the Display Options tab from the Report wizard or Document Settings provides the same functionality for selecting and saving the attributes included.

Choose **Properties from Links** and **History** in **Open Forms**

From Links and History segments on an open form, users may choose **Properties** to modify the attributes to display and the sorting order.

Choosing the Attributes to Display

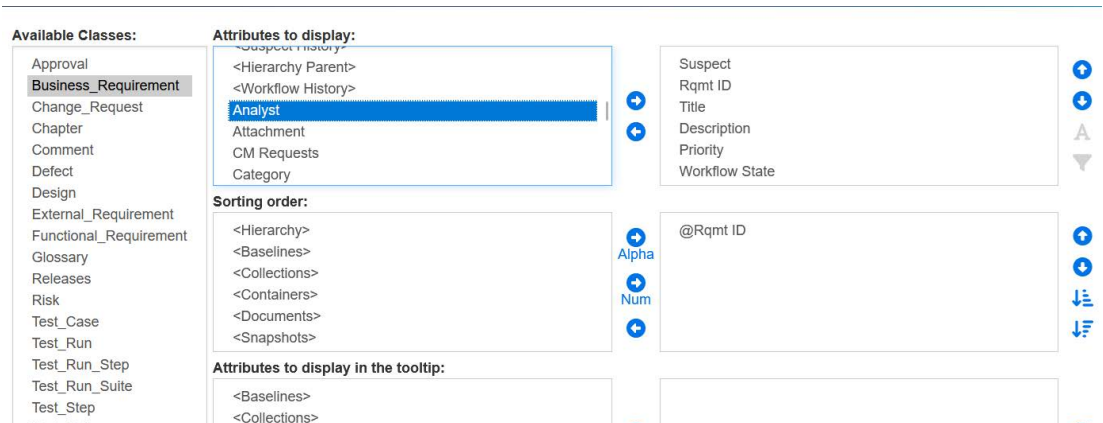
There are times when you want to export requirements for review including only the title and description, while at other times you may want to include priority, release and owner. Whatever the need, it is always possible to modify the attributes included in a display list, a document or a report using the settings in **Attributes to Display**.

The mechanism for establishing the attributes displayed for each class is set in Quick Search Settings, see ["Quick Search Settings" on page 81](#).

The mechanism for accessing this dialog to modify the display for one or more classes is through the Columns Icon in Quick Search or Home View lists or using **Display Options** in reports or documents.

This **Attributes to Display** dialog includes all custom, system and **Special Attributes**. **Special Attributes** are variables containing collected or calculated values. For example, including the attribute <Baselines> will include in the display all baselines in which the object has been included. See ["Special Attributes" on page 57](#) for a complete list.

The left side of the dialog, the **Attributes to Display** dialog, provides access to all available attributes. Highlight an attribute and use the right arrow to include an attribute in the display, or choose attributes on the right and left the left arrow to remove them from the display.

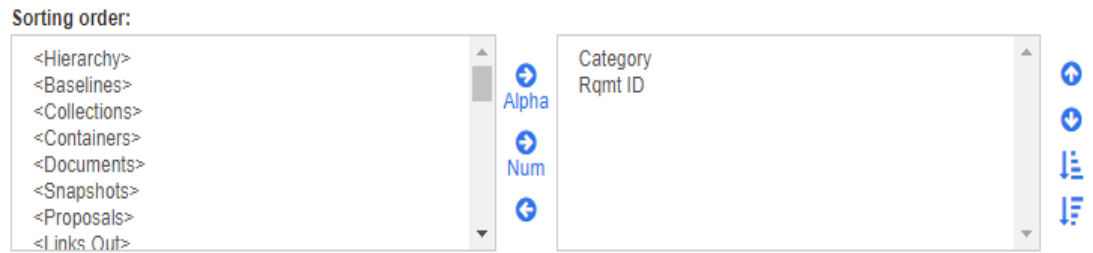


The order of the display is modified using the arrows along the right side of the dialog.

Additional icons are used to rename or filter attributes, for a description of these functions, see [Display Options Tab](#).

Sorting Order List

The **Sorting Order** list determines the order in which the list is displayed. You can specify several levels of sorting, e.g., Rqmt. ID within Category.



To specify the sort type:

- 1 Select one or more attributes in the **Sorting Order** list.
- 2 Click one of the following buttons:

Alphabetic button  **Alpha** for a simple alphabetic sort.

Numeric button  **Num** for a numeric sort. This type of sort can be used for alphanumeric attributes such as paragraph numbers in outlines. For example, with a numeric sort, the numbers (10, 20, 1, and 2) are sorted as (1, 2, 10, 20) instead of (1, 10, 2, 20).

Date Attributes If you choose an attribute with the *Date* data type, the results are sorted in date order regardless of whether you chose **Alphabetic** or **Numeric**.

To specify the sort order:

- 1 Select an entry in the sort list.
- 2 To change the sort order, choose one of the following buttons:
 -  to have the data sorted before other data.
 -  to have the data sorted after other data.

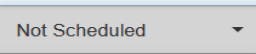
For example, select **Paragraph ID** if you want the query results to be sorted in the order presented in the original document, and click the **Numeric** button to sort by paragraph number. Then select **Priority** and click the **Alphabetic** button if you want the requirements with the same paragraph ID sorted by the priority assigned to them.

To specify the sort direction:

- 1 Select an entry in the sort list.
- 2 To change the sort direction, choose one of the following:
 -  to sort ascending (A-Z, 0-9).
 -  to sort descending (Z-A, 9-0).

Find and Select List Values

For list attributes and user attributes, the **Find & Select** dialog is available when the lists are long and you want to filter, or view the list with descriptions.

Click the search next to any list Attribute, e.g.,   to raise the list with descriptions, if help is needed to find the correct value.

The dialog for list attributes lists all possible values with descriptions, if included, while the dialog for user attributes displays User IDs along with full names and Team membership. The screenshot and steps below describe the dialog for user attributes.

Find & Select User

User ID	First Name	Last Name	Team
Filter by User ID...	Filter by First Name...	Filter by Last Name...	Filter by Team...
ASCHOEJ4	Julia	Schoeller	DB
EPHOTO	Ryan	Forbes	
JENS	Jens	Krahmann	DB
JOE	Joseph	Wilson	
JUTTA	Jutta	Schoeneberger	QA - Test
KAY	Kay	Fuhrmann	GUI

OK Cancel

Users can be found by filtering the list using these boxes:

User ID: Filter the list by entering part of the user ID.

First Name: Filter the list by entering part of the first name.

Last Name: Filter the list by entering part of the last name.

Team: If enabled, filter the list by entering part of the team name.

When the list shows the desired value, highlight or check the box (or boxes if multi-select) and click **OK**.

Quick Find and Advanced Search

Requirements gathering can focus on attribute content or relationships. The functions listed in this section are accessed from multiple dialogs in exactly the same way.

In this section we discuss the following:

- Search through recently accessed: ["Quick Find from Recent" on page 42](#)
- Using Advanced Search: ["Advanced Search" on page 43](#)

Quick Find from Recent

When working with requirements users often perform functions using the same or related objects. This often means that when using Actions such as **Create Link** (see [Create Link or Link Existing](#)) or **Add to Document** (see [Adding Requirements to a Document](#)), you may be looking for something recently created or accessed.

To facilitate a quick result, the find first presents the recent list with access to the **Advanced Search** Dialog should the recent options fail to find what you are looking for.

- 1 Click inside the search box to open the recent requirements list.
 - a If displayed, select the relevant requirement from the list.
 - b Click **Add**.

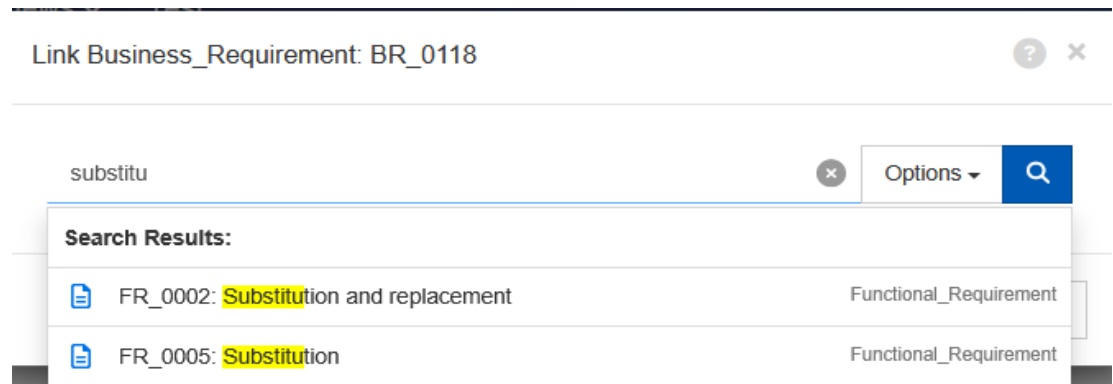


Figure 1-7. Select one or use **ctrl+click** to select multiple targets.

- 2 Enter a search string and click the search icon to locate matching requirements.
- 3 Click **Options** to further refine the search:
 - Use **Limit Search to:** to limit the range of the search string to PUID (Rqmt. ID), Title and/or Description.
 - Use **Class Filter** to limit Classes displayed. When linking, only linkable objects will be listed
 - Use **Category** to limit Categories.
- 4 Select one or use **ctrl+click** to select multiple targets; refresh the list to continue.
- 5 Click **Add**.
- 6 **Link or Add More** returns you to the dialog. **Close** Exits.

If additional search options are required to locate the targets of your search, use **Advanced Search** to access the full capabilities of **Find Now** (see "[Advanced Search](#)" on page 43).

Advanced Search

The Advanced Search, or its component parts, is central to the ability to finding objects to include in documents or reports or to link to. The search, which culminates with the **Find Now** button provides additional mechanisms for filtering Attributes and Relationships, as well as to define the display that will ensure recognition of the items - once found.

The options in the advanced search can be saved, user-feedback indicates that this is particularly useful for the display options.

The Advanced Search consists of a main dialog, and three sub-dialogs all of which will become familiar to RM Users.

From the Main dialog:

Input the Relationship or Class that is the target of the search.

Relationship: If the source requirement is related to multiple classes, choose the relationship to the class that is the target of your search.

Class: If you are searching for requirements to add to a container, choose the Class.

Saved Filters: A saved filter may be selected and applied here. Relevant reports may also be used to limit the search.

Attribute Constraints: As needed to limit selection to requirements containing the attribute content specified. See ["Attribute Constraints Tab" on page 44](#)

Relationship Constraints: As needed to limit selection to requirements included in named containers or to those with specified links. See ["Relationship Constraints Tab" on page 51](#).

Display Options: As needed to display the results most helpful in the search. See ["Display Options Tab" on page 53](#).

Link Attributes: This option is only available if you have selected a relationship for which link attributes have been defined.

Click **Link Attributes**. This opens the *Edit Link Attributes* dialog.

Edit or select the desired or required attributes (see ["Editing Link Attributes" on page 158](#)).

Click **Save**.

Remember these options: Select this checkbox to retain the current settings as the default for future invocations of the dialog.

Find Now: Click this button to run the search. The results are displayed in the lower pane of the dialog.

Create Link Note:

If Linking is the goal, each requirement that is already linked to the original requirement has a chain icon  next to it.

If adding requirements to a Document:

An icon in the first column indicates that the requirement is already in the document, although it can be included again in other chapters.

Once an object is selected, the **Add as subrequirement** box may be checked to add the object as a subrequirement to the object selected in the Navigation pane.

If the selected requirement is already in the document, the Remove button will become clickable. Selecting Remove will remove the object from the document.

Select one or use **ctrl+click** to select multiples.

Click on **Add or Add Link**.

New Search: Click this button to clear the current search criteria and results.

Attribute Constraints Tab

The Attributes Constraints Tab is basic to search mechanisms and report generation. This tab is used to filter the requirements to be collected based on specified content, for example, all requirements with Priority set to High, all requirements assigned to JoeWilson or contained in the selected release.

The following may be included for selection in the Attribute Constraints Tab:

- 1 Category:** Choose the Category or Categories to be included in the search.

Apply for all Classes: This selection is included when choosing categories for Traceability Reports: check "**Apply for all Classes**" if the category restriction should be applied to all selected classes.

2 Setting Constraints on Related Classes

With Traceability reports, select an entry from the **Class** list to set constraints for the selected class.

Select Related Classes: With Class reports and Graphical reports, you can filter by attributes contained in **Linked** items by executing the following steps:

Click **Select Related Classes** to open the dialog.

Select one or several classes. To include a class that is linked to one of the related classes, expand the class (by clicking the triangle next to the option box) and select the child class.

Click **Save**. Once related classes have been saved, the Class list will be available.

Select an entry from the Class list to set attribute constraints on the related class (e.g., show only related functional requirements with a workflow status of Approved).

3 For each attribute in one of the following sections, specify a value

If you leave a field blank, any value for that attribute is retrieved in the query.

If you select multiple values for attributes that are displayed in a list, any of the selected values are matched.

Use wildcards in the attributes constraints sections to query for a keyword. For example, if you want to find the requirements that contain the word "system" in the title, enter *system* in the **Title** Attribute

4 To enter values into the attribute boxes of more than one class, return to 3.

5 Select the **Case sensitive search** check box to match case.

For additional information concerning the Attribute Constraints Tab Controls review the following:

- Choosing one or Multiple Categories: [Choosing Categories](#).
- Selecting From Group Attributes: [Group Attribute Selection](#).
- Identifying and choosing Attribute Operators: [Attribute Operators](#).
- Making choices at Runtime: [Runtime Choice](#).
- Working with the Calendar: [Date Control](#).

Choosing Categories

The *Choose Categories* dialog

Category: in Choose Categories

is available when collecting requirements from multiple folders for reporting or reviewing.

Category constraints identify the categories to be included or excluded when retrieving requirements. Users may also choose whether the categories should be entered at runtime (that is, at execution time) or whether the category or categories are stored as part of the query.

When choosing categories for Traceability reports, the category and runtime choices apply to all the classes.

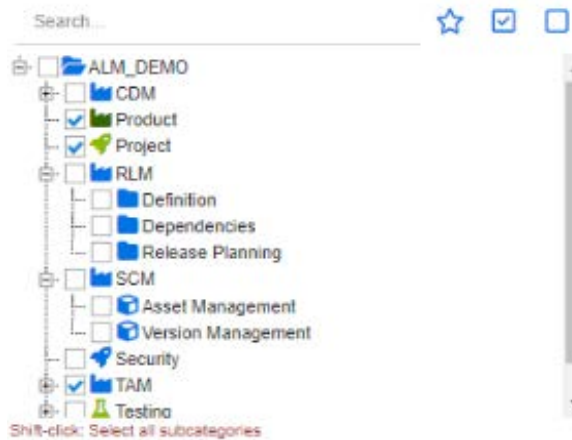
Perform one of the following steps:

Click the down arrow ▼ to the right of the default choice (**in**) to specify whether the selected categories should be included or excluded (**not in**).

Click the down arrow ▼ to the right of the **Categories** list to specify whether to make the category choice part of the query (**Enter Now**) or if the selection should be made when the query is executed (**Enter at runtime**).

The Choose Categories dialog is the same in either case.

Clicking inside **Choose Categories** opens the dialog to provide access to the following features:



- **Search:** Enter a search string to dynamically find categories.
- Click ☆ to limit the selection to Favorites.
- Click ☑ to select all categories.
- Click ☐ to clear all selected categories.
- **Shift-click** to select a parent and all sub-categories.

Group Attribute Selection

Group attributes behave like a table with one or several values per row. Quick Search allows the user to consider how these values will be evaluated.

You can select one of the following:

- in (AND)
- in (OR)
- not in (AND)
- not in (OR)
- null

- not null

The following examples use the **Tests** class of the **RMDEMO** instance.

In (AND)

When choosing the **in (AND)** operator, a requirement is added to the result list if all values of the group attribute match all queried values.

Example:

- 1 Select the class **Tests**.
- 2 Add the attribute **Operating System**.
- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .
- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the operator selection shows **in (AND)**.
- 9 Run the report.

The result list contains requirements with the **Operating System** attribute having the combination of the following values: **Desktop-Windows-XP**, **Desktop-Windows-Vista** or **Desktop-Windows-7**.

In (OR)

When choosing the **in (OR)** operator, a requirement is added to the result list if any of the values of the group attribute matches at least one of the queried values.

Example:

- 1 Select the class **Tests**.
- 2 Add the attribute **Operating System**.
- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .
- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the operator selection shows **in (OR)**.
- 9 Run the report.

The result list contains requirements that contain either **Desktop-Windows-XP**, **Desktop-Windows-Vista** or **Desktop-Windows-7** (among other values) in its **Operating System** attribute.

Not in (AND)

When choosing the **not in (AND)** operator, a requirement is added to the result list if the values of the group attribute do not match all of the queried values.

Example:

- 1 Select the class **Tests**.
- 2 Add the attribute **Operating System**.
- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .
- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the operator selection shows **not in (AND)**.
- 9 Run the report.

The result list contains requirements with the **Operating System** attribute **not** having the combination of the following values: **Desktop-Windows-XP, Desktop-Windows-Vista** or **Desktop-Windows-7**.

Not in (OR)

When choosing the **not in (OR)** operator, a requirement is added to the result list if the values of the group attribute do not match any of the queried values.

Example:

- 1 Select the class **Tests**.
- 2 Add the attribute **Operating System**.
- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .
- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the operator selection shows **not in (OR)**.
- 9 Run the report.

The result list contains requirements that contain neither **Desktop-Windows-XP, Desktop-Windows-Vista** or **Desktop-Windows-7** in its **Operating System** attribute.

Null

When choosing the **null** operator, a requirement is added to the result list if no group attribute value has been specified.

Not Null

When choosing the **not null** operator, a requirement is added to the result list if any group attribute value has been specified.

Attribute Operators

In the Attribute Constraints tab, the operator (e.g., contains, in, =, etc) defaults to the top of the list of possibilities based on attribute type. If you click the down-arrow ▼ the full list of appropriate operators will be available.

This same set of operators is available from all filters.

The following table describes each operator.

Operator	Description
=	The attribute equals the value you specify. The wildcard characters *, %, and _ are supported. * or %: A wildcard character for any set of characters. _: A wildcard character for a single character.
not =	The attribute does not equal the value you specify. The wildcard characters *, %, and _ are supported. * or %: A wildcard character for any set of characters. _: A wildcard character for a single character.
<	The attribute is less than the value you specify.
>	The attribute is greater than the value you specify.
<=	The attribute is less than or equal to the value you specify.
>=	The attribute is greater than or equal to the value you specify.
between	The attribute is between the two values you specify. When you select the "between" operator, another field appears that allows you to type the second value.
not between	The attribute is not between the two values you specify. When you select the "not between" operator, another field appears that allows you to type the second value.
Contains	The attribute contains the string specified. This applies to Text, Alphanumeric and URL attributes. For example, using the string corp will include objects if the specified attribute contains the URL Myowncorporate.com
Not Contains	The attribute does NOT contain the string specified. This applies to Text, Alphanumeric and URL attributes. For example, using the string corp will exclude objects if the specified attribute contains the URL Myowncorporate.com
null	The attribute has not been set (not initialized).
not null	The value has been set (initialized).
in	The attribute equals one of the values you specify.
not in	The attribute does not equal one of the values you specify.

Runtime Choice

If you hover over the down arrow ▼ to the right of the attribute label, a list opens that lets you choose whether the attribute value is to be entered at runtime (that is, at script

execution time) or stored as part of the query. The following table describes the choices in the list.

Choice	Description
Enter now	The attribute value is stored as part of the query.
Enter at runtime	The user is prompted to enter the attribute value when the query runs. When applying runtime options, they may be saved by checking 'Remember these Parameters'.
Current Date	This option is only available for date attributes. When running the report, the date field is compared to the date (and time) of the date attribute for which this option is selected.

Date Control

The date displayed matches the format specified in the attribute definition.

To select and set the date:

- 1 Click the calendar icon .



- 2 Click  to set the date to today.
- 3 Click  to clear the selection.
- 4 Click  to close the calendar.

Relationship Constraints Tab

This tab uses relationship criteria to determine which requirements are included.



NOTE About Logging Out

The constraints selected on the **Constraints** tab are combined using an AND operation. That is, the requirement must meet all specified constraints before it is included in the report.

To complete the Relationship Constraints tab:

- 1 Click the **Relationship Constraints** tab.

- 2 *Traceability Report only:*

Relationship constraints may be applied individually, by class. To limit criteria to a specific class, uncheck 'Apply for all Classes' and choose the relevant class from the Class drop-down.

- 3 **Collection constraints** describe collection memberships to be applied when retrieving requirements.

Select collections from the **Collections** list, and select from the constraint options to specify whether they should be included in the query. To select multiple collections in the list, hold down the Control key while you select the collections. To select a range of collections, select the first collection, press the Shift key, and then select the last collection. You can find collections by scrolling in the list, or by typing a substring of the collection name in the **Find collection** box.

The constraint options include:

In any selected collection(s) to include requirements in any of the collections selected

Not in any selected collection(s) to exclude requirements from any of the collections selected

In all selected collection(s) to include requirements contained in each of the collections selected

Not in all selected collection(s) to exclude requirements that are not contained in every one of the collections you selected

In any collection(s) to include requirements contained in any collection to which the user has access.

Not in any collection(s) to exclude requirements that are not in any collection to which the user has access.

- 4 **Baseline constraints** describe the baselined set of requirements used when retrieving requirements.

Select baselines from the **Baselines** list, and select **In** or **Not In** to specify whether or not they should be included in the query.

You can include more than one baseline constraint in the query.

You can find baselines by scrolling in the list, or by typing a substring of the baseline name in the **Find baseline** box.

To select **multiple baselines** in the list, hold down the Control key while you select the baselines. To select a range of baselines, select the first baseline, press the Shift key, and then select the last baseline.

The constraint options include:

In any selected baseline(s) to include requirements in any of the baselines you have selected

Not in any selected baseline(s) to exclude requirements from any of the baselines you selected

In any baseline(s) to include requirements contained in any baseline to which the user has access.

Not in any baseline(s) to exclude requirements that are not in any baseline to which the user has access.

5 Document constraints describe documents to use when retrieving requirements.

Select documents from the **Documents** list, and select **In** or **Not In** to specify whether they should be included in the query.

You can find documents by scrolling in the list, or by typing a substring of the document name in the **Find document** box.

To select **multiple documents** in the list, hold down the Control key while you select the documents. To select a range of documents, select the first document, press the Shift key, and then select the last document.

The constraint options include:

In any selected document(s) to include requirements in any of the documents you have selected

Not in any selected document(s) to exclude requirements from any of the documents you selected

In any document(s) to include requirements contained in any document to which the user has access.

Not in any document(s) to exclude requirements that are not in any document to which the user has access.

6 A snapshot is a version of a document at a specific point in time.

Snapshot constraints describe snapshots to use when retrieving requirements. Select snapshots from the **Snapshots** list, and select **In** or **Not In** to specify whether they should be included in the query.

You can include more than one snapshot constraint in the query.

You can find snapshots by scrolling in the list, or by typing a substring of the snapshot name in the **Find snapshot** box.

To select multiple snapshots in the list, hold down the Control key while you select the snapshots. To select a range of snapshots, select the first snapshot, press the Shift key, and then select the last snapshot.

The constraint options include:

In any selected snapshot(s) to include requirements in any of the snapshots you have selected

Not in any selected snapshot(s) to exclude requirements from any of the snapshots you selected

In any snapshot(s) to include requirements contained in any snapshot to which the user has access.

Not in any snapshot(s) to exclude requirements that are not in any snapshot to which the user has access.

7 *Class, Graphical and Traceability Report only:*

Relationships connect a primary and a secondary class. Select relationships from the **Relationships** list, and select **In** or **Not In** to specify whether they should be included in the query.

You can include only one relationship constraint in a query.

You can find relationships by scrolling in the list, or by typing a substring of the relationship name in the **Find relationship** box.



NOTE Special Relationships

<Source> and **<Immediate>** are special relationships that are used to locate versions of requirements.

The **<Source>** relationship refers to the original requirement in a chain of versions.

The **<Immediate>** relationship refers to the immediate predecessor or successor of a requirement.

Display Options Tab

This section begins with the basics: ["About the Display Options Tab" on page 53.](#)

With additional detail concerning:

[Additional Insights into linked requirements](#)

[Including Filtered Comments in reports](#)

[Calculating Numeric Attribute Values in Reports](#)

About the Display Options Tab

The Display Options Tab provides a facility for users to select the attributes displayed for selected classes when configuring detail for reports, documents, and search queries. This tab determines which attributes are displayed, how they are displayed, and, in some cases, how they shall be named when displayed.

In many dialogs, users may not only choose the attributes to display but also filter the display of information from linked objects or associated comments.

From the Display Options Tab the attributes displayed for each class and the sort order is selected:

Specify Columns to Display: Select available attributes from the left and use the right arrow to move them to the right; use the up/down arrows to change the order in

which they appear in the listing. For detail see ["Choosing the Attributes to Display" on page 40](#).

Add row Count: For Class, Relationship and Traceability reports check the **Add row count** box to include the total number of rows at the bottom of the report.

Sorting Order: Select the attributes used to determine the order in which the output will be displayed. Once selected, determine if the attributes should be sorted numerically or alphabetically and in ascending or descending order. For detail see chapter ["Sorting Order List" on page 40](#).

Attributes to Display in Tooltip: Select the attribute that will be displayed when a user hovers over an RM Requirement ID. An attribute may be selected for each class in, for example, a traceability report.

Remember these options: Check this box for each class whose options you want to store for access the next time the dialog is invoked for the same class.

Class Report: Marketing_Requirements

GENERAL ATTRIBUTE CONSTRAINTS RELATIONSHIP CONSTRAINTS **DISPLAY OPTIONS**

▼ ATTRIBUTES TO DISPLAY

<Baselines>
 <Collections>
 <Containers>
 <Documents>
 <Snapshots>
 <Proposals>
 <Links Out>
 <Links In>
 <Links Out Details>

Delivery Phase
 Rqmt ID
 Title
 Product Workflow (<Links Out Details>)
Product Compliance (<Links Out Details>)
 Effort (Sum)

☒ Add row count

▼ SORTING ORDER

<Hierarchy>
 <Baselines>
 <Collections>
 <Containers>
 <Documents>
 <Snapshots>
 <Proposals>
 <Links Out>
 <Links In>

Delivery Phase
 Rqmt ID

Alpha
Num

▼ ATTRIBUTES TO DISPLAY IN TOOLTIP

Rqmt ID
 Suspect
 Target Release
 Time Created
 Time Modified
 Title
 <DEFAULT_TITLE>
 CM Associations
 <Collections>

Text

☐ Remember these options

View Script Preview **Save** Cancel

Figure 1-8. Example includes Workflow and Compliance from linked requirements (output shown on page 56).

The Icons in the Display Options Tab

	Move Up: Move the highlighted entry up in the display or sort order
	Move Down: Move the highlighted entry down in the display or sort order
	Rename: Provides a mechanism to rename the displayed entry; this is particularly useful when displaying attributes from linked classes.
	Filter: Provides a mechanism to filter links or comments from related objects depending on selected attribute type, as described below in: Additional Insights into linked requirements Including Filtered Comments in reports
	Calculation Settings: For numeric attributes, choose a function and, optionally, change the label.
	Sort ascending: Sort selected numeric attributes 0-9; Alphanumeric A-Z For date attributes select as numeric, ascending sorts oldest first.
	Sort descending: Sort selected numeric attributes 9-0; Alphanumeric Z-A For date attributes select as numeric, descending sorts most recent first.

Additional Insights into linked requirements

Expanding the benefits of **<Links In Details>** and **<Links Out Details>**

Using Display Options settings it is possible to include attributes from requirements to which the selected requirement is linked.

For example, in a schema in which Marketing Requirements are linked to Product Requirements, a report listing Marketing detail can include the attribute information from the linked Product Requirement(s). The Workflow Status, the compliance level and/or the Owner can be included in the output.

These **Insights** into linked requirements are achieved using the Special Attributes **<Links In Details>** or **<Links Out Details>**.

Note that either attribute may be selected multiple times in order to display multiple attributes from the same linked class.

To include Details from Linked Requirements:

Highlight the Attribute **<Links In Details>** or **<Links Out Details>** in the display attributes list.

Click  to open the **Filter Links** dialog.

Show Links to: Choose the relevant class from the drop-down.

Display Attributes: Choose the attribute whose content should be displayed.

Check **Chart** if a list attribute is selected in order to *chart* rather than list the content.

In the report example in [Figure 1-9](#):

<Links Out Details> was selected twice in order to select and display both Workflow and Compliance from the Linked Product Requirements.

Product Workflow and **Product Compliance** are list attributes with Chart checked for each, the result is for each of the linked product requirements, the Workflow and Compliance are shown.

Click **OK** to close the dialog.

Click **A** to modify the column title displayed.

For example, to rename <Links Out Details> to Product Workflow. as shown below. The original attribute name is retained in the display options text.

Choose the **Preview** button to review input prior to saving the report.

Marketing_Requirements					
Deliver...	Rqmt ID	Title	Product Workflow	Product Compliance	Effort
Build1	MRKT_000001	EPhoto will be an online phot...	3	2 1	4
Build1	MRKT_000003	Runs on "standard" home PC	3	1 2	4
Build1	MRKT_000023	Displaying stored photo info	1	1	7
Build1	MRKT_000025	Setting personal preferences	2	1 1	6
Build1	MRKT_000026	Application preferences reme...	1 1	1 1	4
Build2	MRKT_000029	System response times	1	1	4
Build2	MRKT_000037	Smart Phone Accessible	2	2	7
Build2	MRKT_000038	Integration	3	1 2	4
Build3	MRKT_000004	Annotate photos with text	4 1	4 1	5
Build3	MRKT_000039	Tablets	3	3	6
Build3	MRKT_000040	Duplicates	1	1	6
Build3	MRKT_000041	Facial recognition	1	1	5
Build3	MRKT_000042	Search facilities	1	1	4
					Sum: 66

Figure 1-9. Report output using settings displayed in [Figure 1-8](#).

Including Filtered Comments in reports

Add the **<Comments>** attribute to the list of displayed attributes.

Select the **<Comments>** attribute in the list of displayed attributes.

Click **T** to open the **Filter Comments** dialog.

Select one of the predefined values from the list or enter the number of days to set the maximum age for comments to be included.

Click **OK** to close the **Filter Comments** dialog.

Calculating Numeric Attribute Values in Reports

When creating a report, you may want to calculate sum, average, min, or max value of a numeric value (e.g. get the average processing time). The result will be shown at the end of the report in the same column as the attribute.

To calculate an attribute value for report output, do the following:

Include the numerical attribute for which you want to calculate sum, average, min or max value to the list of displayed attributes.

Select the numerical attribute in the list of displayed attributes.

Click  to open the **Calculation Settings** dialog:

From the Function box, select the desired function.

If desired, change the text in the **Label** box.

The numeric attribute in the list of display attributes will contain the function selected in parentheses, e.g. Dev Effort (Sum) as used in [Figure 1-9](#).

Click **OK** to close the Calculated Settings dialog.



NOTE About The Wizard

The wizard allows only one function per attribute. If you want to apply multiple functions to a single attribute, the script must be modified. For details, see chapter "[CALCULATE Statement](#)" on page 664.

Special Attributes

The lists contain some special (virtual) attributes whose names are enclosed by <>. These attributes contain collected or calculated values. The following table lists all Special Attributes:

Attribute Name	Script Name	Description
<Baselines>	RTM_BASELINES	The names of the baselines referencing the requirement.
<Chapters>	RTM_CHAPTERS	The name of the chapter containing the object.
<Collections>	RTM_COLLECTIONS	The names of the collections referencing the requirement.
<Comments>	RTM_COMMENTS	The comments related to the requirement.
<Containers>	RTM_KEYWORD	The names of the containers referencing the requirement.
<Documents>	RTM_DOCUMENTS	The names of the documents referencing the requirement.
<Hierarchy Parent>	RTM_HIERARCHY_PARENT	The parent of the requirement object in the hierarchy.

Attribute Name	Script Name	Description
<Linked>	RTM_RELATION	Counts the requirements for which the linked requirement(s) match the specified attribute constraints. For example, specifying a list attribute value in the attribute constraints of the linked class, would count all requirements where the linked requirement(s) match that list attribute value as "Linked" and all those that do not match as "Not Linked". NOTE This attribute is only available in graphical reports.
<Links In Details>	RTM_LINKS_TO_DETAILS	The PUIDs of requirements linked from other requirements to the requirement. In result lists (i.e. Quick Search, reports or documents in Grid/Editable Grid Requirement Layout mode), you can open a linked requirement by clicking the PUID. Additional attributes can be included in <Links In Details>, see "Link Browser Settings" on page 87 for instructions.
<Links Out Details>	RTM_LINKS_FROM_DETAILS	The PUIDs of requirements this requirement links to. In result lists (i.e. Quick Search, reports or documents in Grid/Editable Grid Requirement Layout mode), you can open a linked requirement by clicking the PUID. Additional attributes can be included in <Links In Details>, see "Link Browser Settings" on page 87 for instructions. Note that when using <Linked Test Cases>, test cases will not be included in the <Links Out Details> result list.
<Linked Test Cases>	RTM_LINKED_TESTCASES	The PUIDs of test cases (see chapter "Test Management" on page 409) this requirement links to. In result lists (i.e. Quick Search, reports or documents in Grid/Editable Grid Requirement Layout mode), linked requirements can be opened by clicking the PUID. Note that by default, when using <Linked Test Cases>, test cases will not be listed in the <Links Out Details> result list.
<Links In>	RTM_LINKS_TO	The number of links from other requirements to the requirement. In result lists (i.e. Quick Search, reports or documents in Grid/Editable Grid Requirement Layout mode), you can open a list of linked requirements by clicking the arrow or number in the Links In column of a requirement in the result list. Clicking a requirement in the list opens that requirement for editing.

Attribute Name	Script Name	Description
<Links Out>	RTM_LINKS_FROM	The number of links from the requirement to other requirements, which includes the number of linked test cases. In result lists (i.e. Quick Search, reports or documents in Grid/Editable Grid Requirement Layout mode), you can open a list of linked requirements by clicking the arrow or number in the Links Out column of a requirement in the result list. Clicking a requirement in the list opens that requirement for editing.
<Notification>	NOTIFICATION	Indicates the configuration status of notifications. Possible values: Yes: Enabled No: Disabled If no value has been specified, Notification has not been configured.
<Proposals>	RTM_PROPOSALS	The number of proposals (Action Propose New or Propose Change) related to the requirement in status Proposed. Accepted or rejected proposals are not included in the count. The System Attribute: Proposals may be selected in filters or reports to check for content. Clicking the number opens the Accept/Reject Proposals Dialog which allows users to review and to accept or reject the proposal(s). For details, see section "Reviewing a Change Request" on page 137.
<Related Container>	RTM_RELATED_CONTAINER	Lists the containers associated with the related workflow item; included only with workflow. Opening a listed item will display the container type and detail.
<Snapshots>	RTM_SNAPSHOTS	The names of the document snapshots referencing the requirement.
<Thread>	RTM_COMMENTS_THREAD	Only available for Sorting Order for comments. If comments are ordered by thread, a reply follows the comment it replies to.

Script names are used when writing or modifying report scripts or accessing Dimensions RM Web Services. For further information about scripts see chapter ["Customizing and Scripting"](#) on page 619. For further information about Dimensions RM Web Services refer to the *Web Service and Rest Service Reference* guide.

Logging In

The login process experienced by the user will depend on which login source has been implemented by the System Administrator.



NOTES About Logging In

Cookies must be enabled to access RM.

After a period of inactivity, an RM session times out, and the user is logged out. A login dialog opens so you can log in again. By default, the session timeout is 30 minutes. Your administrator can modify this value.

While the session is active: No matter the log in source, opening a tab using the RM URL will immediately direct the user to the last page accessed. There will be no request for login credentials, database instance, or project.

When using the RM Login with Two-Factor Authentication (2FA), you need an authenticator (e.g. NetIQ Advanced Authenticator, Google Authenticator, or Microsoft Authenticator), which can be downloaded from Google Play Store or Apple App Store.

To allow the authenticator to support the login process, open the Change password dialog (see chapter ["Changing Your RM Password" on page 62](#)) and scan the QR code.

The following login methods are supported:

- ["RM or LDAP Login" on page 60](#)
- ["Single Sign On Login" on page 61](#)
- ["Single Sign On with SmartCard Login" on page 61](#)
- ["Azure Login" on page 61](#)

RM or LDAP Login

Logging into RM:

- 1 Navigate to the URL provided by your administrator. The User Log in dialog opens.
- 2 Enter your user name and password.
- 3 Select the database in which you will be working;
The first time you log in, the full list is included, after that the last database accessed is selected by default.
- 4 Select the RM instance in which you will be working.
Only the RM instances to which you have access are displayed.
- 5 Click the **Login** button or press the **Enter** key.

Single Sign On Login

To log in via SSO:

- 1 Navigate to the URL provided by your administrator. The SSO sign in dialog opens.
- 2 Enter your user name and password.
- 3 Click the **Log In** button. The User Log in dialog opens.
- 4 Select the database in which you will be working.
The first time you log in, the full list is included, after that the last database accessed is selected by default.
- 5 Select the instance in which you will be working.
Only the instances to which you have access are displayed.
- 6 Click the **Login** button or press the Enter key.

Single Sign On with SmartCard Login

To log in via Smart Card:

- 1 Navigate to the URL provided by your administrator. The SSO sign in dialog opens.
- 2 Ensure that your SmartCard is inserted into a reader, and click the **Smart Card Login** button.
- 3 Select a valid certificate from your SmartCard (CAC) and enter the appropriate PIN.
- 4 Click the **OK** button.
The User Log in dialog opens with the **Username** field populated and read-only.
- 5 Select the database in which you will be working.
The first time you log in, the full list is included, after that the last database accessed is selected by default.
- 6 Select the instance in which you will be working.
Only the instances to which you have access are displayed.
- 7 Click the **Continue** button or press the Enter key.

Azure Login

If your administrator configured login through Microsoft Azure, you may have to log in to Dimensions RM using Azure login credentials.

To log in via Azure:

- 1 Navigate to the URL provided by your administrator. Depending on the Dimensions RM environment configuration, either the Dimensions RM User Log in dialog, or the Azure login dialog opens.
- 2 If the Dimensions RM User Log in dialog opens, click the **Microsoft Azure Authentication** link, which is located under the **Login** button.

- 3 Enter your Azure user name and click **Next**.
- 4 Enter your password and click **Sign in**.
- 5 Select the database in which you will be working; the first time you log in, the full list is included, after that the last database accessed is selected by default.
- 6 Select the RM instance in which you will be working. Only the RM instances to which you have access are displayed.
- 7 Click the **Login** button or press the **Enter** key.

Logging Out

Logging out of RM:

Select **Log Out** from the **User** menu (see ["User Menu" on page 30](#)).



NOTE About Logging Out

It is recommended that users log out of RM when work is complete, it will free up a license for colleagues.

Switching to Another RM Instance

To list the instances to which you have access within the connected database, click on the ▼ button next to the current Instance name. To switch, select an alternative instance.

in this example, using the RMDemo instance from RM samples, the first occurrence of

RMDemo ▼ > 📁 RMDemo

RMDemo is the instance name, the second, shown with the blue category folder, is the root project within the instance.

To switch to an RM instance in a different database, you must log out and then log into the desired database. See ["Logging In" on page 60](#).

Changing Your RM Password

The following affects **only those organizations or users within organizations that are logging in using RM Username and password**.

It is best security practice for users to change their passwords from time to time. The RM administrator can enforce this practice by setting the number of days a password lasts before it expires.

Additionally, the RM administrator can enforce password quality requirements, such as the minimum length; minimum number of characters that must be different between the new and the old password; the minimum number of letters, numerals, and special characters; and the number of old passwords that are stored to ensure that a password is not reused too soon.

Using the procedure below, you can view the password rules that are in effect for the RM database. The rules apply to all RM instances in the database.

Before your current password is due to expire, you receive a warning dialog box that gives you the opportunity to change your password.

To change your password:

- 1 Click the **User menu** on the Main Menu Bar; the Change Password dialog box is listed.
- 2 To view the password rules in effect for this RM database, click the **Password Rules** link.
- 3 Type your existing password in the **Old Password** field.
- 4 Type the new password in the **New Password** field.
- 5 Type the new password again in the **Confirm Password** field.
- 6 Click **OK**.

Getting Help

Help is available from each dialog, as well as from the Main Menus. The TOC and Search features of the full help system are also available to find details beyond those included in the dialog Help.

Finding Help:

User Menu: selecting **Help** from the **User** menu (see ["User Menu" on page 30](#)) will raise help topics based on current location.

Dialogs: At the top right of the open dialog, click the question: 

Solution Overview: For a walk through the menus and tabs, see ["Introduction to the User Interface" on page 26](#).

Enabling and Disabling Notifications

If the Instance Administrator has activated Notifications via e-mail or UI Alerts, users may make use of that functionality to ensure that they are informed when objects (requirements or documents) they own or are interested in are modified. Select **Notifications** from the User Menu (["User Menu" on page 30](#)) to activate.

The Notifications dialog consists of three sections:

1 Section 1 - Instance or Private Notification Rules

Users may select and activate notification rules created by the Instance Administrator, as described in ["To Activate Notification Rules:" on page 64](#), or create private notification rules.

The rules are based on a set of criteria. An example might be to notify a user if an object created or owned by them and transition to a release has been changed. For details concerning the creation of private rules see ["Notification Rules" on page 531](#).

2 Section 2 - **Followed Requirements**

This section lists the objects (requirements, test cases, defects, etc.) that you have chosen to follow. These notifications are automatic, and will continue until the objects are removed from the follow list.

Highlight the object and click the X at the end of the line to remove it from the list.

3 Section 3 - **Followed Documents**

The section lists the documents that the user has chosen to follow. Notifications of changes to the document are automatic and will continue until the document is removed from the **Follow** list.

Highlight a document and click the X at the end of the line to remove it from the list.

To Activate Notification Rules:

- 1 Select **Notifications** from the user menu **to** open the Notifications dialog
- 2 From the list of **Inactive Notifications** expand the class by clicking the ►.
- 3 Highlight the relevant notification rule.
- 4 Click ➡ to move it to the active list.
- 5 Click **Save**.
- 6 Click **Close** to exit the dialog.

To disable notifications, do the following:

- 1 Select **Notifications** from the **user** menu.
- 2 From the **Active Notifications** list, expand the class by clicking the ►.
- 3 Highlight the relevant notification rule.
- 4 Click ⬅ to move it to the Inactive list.
- 5 Click **Save**.
- 6 Click **Close** to exit the dialog.

Using the Document Glossary

The glossary in Dimensions RM is only active if the Instance Administrator created the Glossary class as described in ["Defining the Glossary Class" on page 578](#).

With the Glossary, users may define terms relevant to the organization or its related work projects. Documents to which the Glossary option has been enabled (see ["Document Formats and Views" on page 242](#)), may be scanned to create or update the content in the document glossary.

HTML enabled text within the document can be scanned for glossary entries. Each matching term will be highlighted, with a tooltip available with the definition.

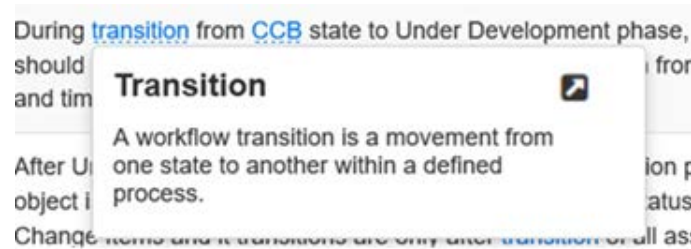


Figure 1-10. Hover over the term for definition, click the arrow to edit.

Glossary entries can be added from the [Glossary Tab](#). Entries can also be added from or inserted into any HTML enabled attributes, see ["Collaborative Document Editing" on page 254](#).

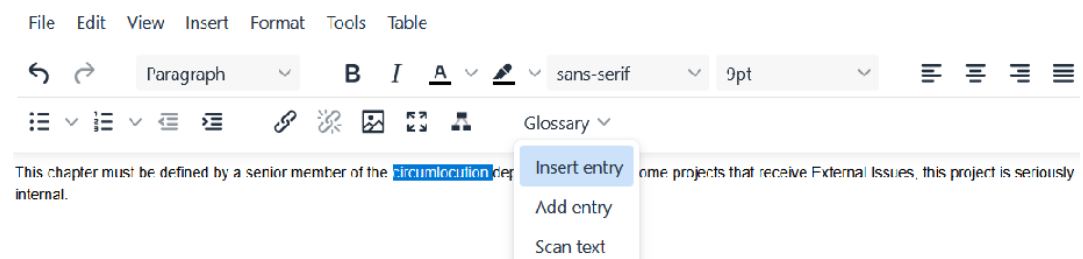


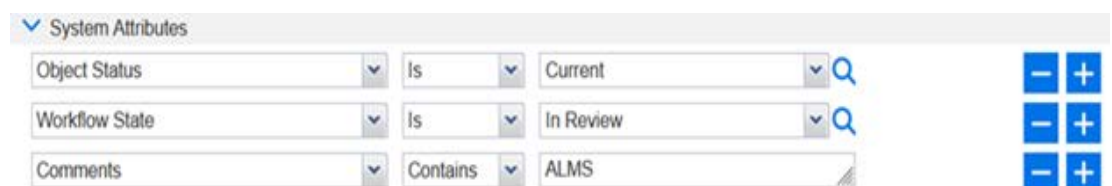
Figure 1-11. Entries can be added from or inserted into any HTML enabled attributes

Participating in Discussions

The comment class is used to facilitate collaboration, ensuring that all stakeholders can provide input and track conversations related to each requirement or document. Reviewers can ask questions or provide suggestions regarding the requirements or chapter text.

Comments can be reviewed for incorporation and acceptance.

Comments can be displayed and used in search criteria as with any other object or attribute. Users may limit a search to requirements with comments, or search for comments containing a specified text string. see ["Quick Search Filtering" on page 185](#)).



In an open requirement form, Comments are listed under System Attributes.

The Document Comments Section on the Actions pane expands into a Dialog allowing reviewers to step through all comments included in requirements or chapter text. Each is presented for review, evaluation, and assignment.

For Details, see:

["Using Comments in Documents" on page 278](#)

["Managing Comments in Requirements" on page 138](#)

Viewing Version and System Information

To view version and system information:

Click the **About** link in the upper right corner of RM. The **About Dimensions RM** dialog box opens, displaying the following information:

Version: The exact version of Dimensions RM you are using.

Web Server: The type of Web server that is hosting RM.
For example, Apache Tomcat/9.0.68

Web Server OS: The operating system in use on the Web server.

Database: The Database in use, with the version number and configuration.

Client: Database Client information.

Browser Name: The name of browser software you are using.

Browser Agent: Version specific information about the browser and its configuration.

Contact Information: For links to the Open Text home page, corporate contact information, and other useful links, see the **Contact Information** tab.

Using Spell Check in RM

Dimensions RM supports spell checking in these attribute types:

Text boxes

HTML Text boxes in Edit Attributes dialog or Editable Grid

The following sections describe details for:

- [Configuring Edge](#)
- [Configuring Firefox](#)
- [Configuring Chrome](#)

Configuring Edge

Edge leverages the Windows spellcheck feature, allowing users access to the same dictionaries and language settings configured in Windows.

Note that only one language can be used at a time. The default language for spell check is the language of your Windows installation. To install additional dictionaries, see chapter ["Installing additional Dictionaries,"](#).

To correct a word in the current language:

- 1 Right-click the incorrect word. This opens a shortcut menu.
- 2 Select the correct spelling from the shortcut menu.

To correct a word in a different language for which a dictionary has been installed:

- 1 Select the incorrect word (left-click).
- 2 In systray, click the language shortcut next to the keyboard symbol (near the clock in the Windows taskbar). This opens a list of the installed languages and input methods.
- 3 Select the language you want to use for the spell check.
- 4 Right-click the incorrect word. This opens a shortcut menu.
- 5 Select the correct spelling from the shortcut menu.

Installing additional Dictionaries

To install dictionaries, do the following:

- 1 Click the Windows start menu button.
- 2 Select the gear (Settings).
- 3 Select **Time & language**.
- 4 Select **Region & language**.
- 5 Click **Add a language**. This opens a list of available languages.
- 6 Select the desired language from the list. This starts the download and installs the dictionary.

Configuring Firefox

Firefox allows spell check for several languages. Note that only one language can be used at a time. The default language for spell check is the language of your Firefox installation.

To configure Spell Check in Firefox 61, execute these steps:

- 1 Click  and select **Settings** from the menu.
- 2 Type **Spelling** into the search box.
- 3 Ensure that the **Check your spelling as you type** option is selected.

Installing additional Dictionaries

To install dictionaries, execute these steps:



NOTE About Firefox Dictionaries

Dictionaries in Firefox are add-ons. Only install dictionaries if the policies of your organization allow installation of add-ons.

- 1 Do one of the following
 - Click ☰ , select **Add-ons** from the menu.
 - Press the **Alt** key and release it, then select **Add-ons** from the **Tools** menu.
- 2 Select **Extensions** from the left pane.
- 3 Type a search expression into the search box, e.g. *German dictionary*.
- 4 Click one of the results which matches your preferred dictionary. This opens the **Add-ons** page for that dictionary.
- 5 Click **Add to Firefox**.
- 6 After download is complete, click **Add**.

Using Spell Check

Firefox allows spell checking for any language a dictionary has been installed. To install dictionaries, see chapter ["Installing additional Dictionaries" on page 67](#).

To check the spelling of a text field, execute these steps:

- 1 Right-click the text field you want to check.
- 2 From the shortcut menu, select **Check Spelling**. This uses the language of your most recent spell check.
- 3 To repeat the spell check with a different language, execute these steps:
 - a Right-click the text field you want to check.
 - b In the **Languages** menu, select the language you want to use for your spell check.

Configuring Chrome

Chrome supports spell checking for any installed dictionary.

To enable or disable spell check in Chrome, execute these steps:

- 1 Click ☰ , select **Settings** from the menu.
- 2 Select **Languages --> Spell Check**.
- 3 Expand the **Language** section.
- 4 Enable Basic or Enhanced spell check.
- 5 See Chrome documentation to customize or expand your Chrome Spell Checking.

Chapter 2

Dimensions RM Settings

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User Settings Versus Instance Settings

Instance Settings are those established and maintained by the instance administrator. Many of these settings can be overridden by individual users to create an environment that addresses their own needs. A user, for example, may change the language used by the Browser, limit the requirement types available and adjust the attributes displayed by each requirement class.

The following sections define all settings, with detail for both **Instance** and **User settings**, such that users may understand all features - including those they cannot change.



NOTE

Some settings are instance-wide. They are grayed out and cannot be edited in the **User Settings** dialog.

The Instance Administrator may have established default settings, which in many cases, the user may modify. To modify the defaults, uncheck the '**Use Instance settings**' box.

Each **User Settings** tab provides, at the bottom left, a button to allow each user to **Reset to Instance Settings**

Settings: [Reset to Instance Settings](#)

Configuring Settings

The User Settings and Instance Settings dialogs are similar. Users can not modify Instance Settings, but they will want to understand them and, perhaps, request changes.

User Settings are accessed from the User menu ("[User Menu](#)" on [page 30](#)) at the top right corner of the screen. **Instance Settings** are accessed from the Administration Menu.

The main Settings dialog consists of a list of tabs, *General, Home, Requirements, etc.* Within each tab, a set of options relative to the tab are listed. Users and/or Administrators may choose the defaults for each tab.

Once change(s) has been made:

- the **OK** button saves the changes and exits the Settings dialog,
- the Apply button saves the changes,
- Cancel - cancels changes and exits the Settings dialog.

The Tabs and their descriptions are as follows:

- "[General Settings](#)" on [page 71](#).
- "[Home Settings](#)" on [page 73](#).
- "[Requirements Settings](#)" on [page 74](#).

- ["Quick Search Settings" on page 81.](#)
- ["Hierarchy Settings" on page 82.](#)
- ["Document Settings" on page 83.](#)
- ["Report Settings" on page 87.](#)
- ["Link Browser Settings" on page 87.](#)
- ["Split View Settings" on page 89.](#)
- ["Branch Merge Settings" on page 92.](#)
- ["Notification Settings" on page 89.](#)
- ["Risk Management Settings" on page 90.](#)
- ["Test Management Settings" on page 91.](#)
- ["Security" on page 93.](#)

Not all Tabs are available with all implementations. If, for example, Test Management has not been implemented, the settings will not be listed.

General Settings

The following are set from the **General** tab in User Settings (under the User Menu) or Instance Settings (from the Administration Menu).

- **Locale**

Administrators or Users have the ability to localize the UI: to change the default language. Available languages include: Chinese, English, German, Japanese, Spanish, and Brazilian Portuguese.

- **Theme**

Administrators or Users have the ability to choose an RM Browser Theme. The choices include the default Open Text Blue, the legacy RM Blue, Cyan or Green.

- **Categories: Show Inactive Categories**

An Administrator may choose to deactivate selected categories; this is typically done for completed or retired projects. Once deactivated, categories are hidden in the category tree and in query dialogs; no report will return data from an deactivated category.

All objects (requirements, documents, collections, baselines and reports) contained in an inactive category are read-only.

If displayed, inactive categories and the subcategories within them are represented by folder icons in gray, with the category name displayed in gray, italic text. .

To activate or deactivate categories, see chapter ["Activating or Deactivating a Category" on page 521.](#)

Users may choose to enable or disable the display of inactive categories:

Enable: Show Inactive Categories

When **enabled**, the category tree will display inactive categories and all query dialogs will include their content.

Disable: Show Inactive Categories

If this option is **disabled**, the category tree will not display inactive categories and query dialogs will not include their content.

- **Categories: Use Default Category from Breadcrumb**

This option defines how the category for new objects (i.e. requirements, proposals, documents, collections, baselines, and reports) is set in the dialog.

Enable:

When this option is **enabled**, the category attribute for new objects will be **prepopulated** with the category displayed in the breadcrumb.

Disable:

When **disabled**, the prepopulated category for new objects will be identical to the **category last used** in any dialog or tab.

- **Breadcrumb**

This setting can only be changed in the **Instance Settings** dialog.

The administrator may choose to include the database name in the breadcrumb. This is useful for teams working in multiple instances.

Enable: Show Database Name

- **Collection: Automatic Refresh**

Users may choose whether **report-based collections** (e.g., collections created based on a query) should be automatically refreshed when opened.

Enabled: Report based collections are refreshed when the collection is opened. When report based collections are used to support active integrations, we recommend that this setting is enabled.

Disabled: Collections must be manually refreshed. For further information see ["Refreshing the Contents of a Collection" on page 372](#).

- **Teams**

This setting can only be changed in the Instance Settings dialog.

Teams provide a facility for assigning tasks to a groups defined as a Team (see ["Managing Teams" on page 515](#))

Enabled: Teams functionality is enabled

- **Agile**

This setting can only be changed in the **Instance Settings** dialog.

Dimensions RM provides support for Agile Development. For detail, see ["Agile" on page 425](#)).

- **ReqIF Import: Allow Attribute Creation**

This setting can only be changed in the **Instance Settings** dialog.

Enabled: New attributes may be created in the ReqIF import dialog.

Disabled: New attributes may not be created in the ReqIF import dialog.

ReqIF import details can be found in ["Importing Requirements from a ReqIF File" on page 402](#)

Home Settings

The following are set from the **Home** tab in User Settings (under the User Menu) or Instance Settings (from the Administration Menu).

- **Tabs**

Lists the tabs available to users from the **Home** view, the order in which they are listed.

All tabs available for use are included in the **Available Tabs** list. However, users may choose a subset of those available to include on the **Visible Tabs** list.

Items that appear on the **Visible** list may be selected and moved to the **Available** list, and returned, should the need arise.

All tab names in the **Visible Tabs** list will appear in the Home View in list order (top entry in the list is the left-most tab in the Home View).

Modifying Tab Names:

The **Instance Administrator or users** may modify the tab names to conform to a project specific process language. For example, if Risks are referred to as Hazards, or Dashboards as Corporate Status, these labels can be applied.

To modify a tab label, highlight a tab from the list of **Visible Tabs** and then select the letter **A** located below the arrows used to order the tabs.

- **Default View**

The panel in the leftmost panel of the Home View provides access to Categories and may be set to one of two displays:

Enable Category View: list categories and subcategories like folders on the file system. In the category view, a folder is selected, objects are listed relative to the selected category and New objects will be, by default, created within that folder.

Enable Hierarchy View: also displays categories, as folders, but the display expands to list the objects (requirements, documents, etc.) contained within the folders, arranged as a hierarchy. Many organizations choose to manage requirements in this hierarchical format with header requirements offset from the detail, below, in a document-like structure. In fact, documents can be created and populated directly from the hierarchy structure.

It is typical for all team members maintaining a requirement hierarchy to choose the hierarchy view for object creation and modification. This will ensure the maintenance of the hierarchical structure.

- **Recent Items**

Users check one or more boxes to select the type of recently modified objects to be included under **Recent** on the Home View. When modifying or reviewing a set of requirements or executing favorite reports, **Recent** allows users to easily return to an object for further consideration or for linking.

Using the gear to the right of Recent allows users to change the setting while they work in order to limit the display to what is important - now:

Document / Snapshots.

Requirements

Reports

Collections / Baselines

- **Documents: Show only most recent Snapshots**

Enabled: Only the most recent document snapshot is displayed. By clearing this option, all document snapshots are listed.

- **Pagination**

Enabled: Lists in Documents Collections and Baseline tabs will be limited by the **Page Size** specified.

Requirements Settings

The following are set from the **Requirements** tab in User Settings (under the User Menu) or Instance Settings (from the Administration Menu).

Details for the Requirement tab settings can be accessed as follows:

- [Concurrent Editing](#),
- [Display Settings for Classes](#),
- [Display Settings for User Attributes](#),
- [Display Settings for Categories](#),
- [Display Settings for Lists](#),
- [Display Settings for Requirements](#),
- [Workflow Settings](#),
- [Text Field Height](#),
- [Copy Options](#),
- [Change Proposal](#),
- [Suspect Links](#),
- [Change Class](#),
- [Comments](#),
- [Complexity Analysis](#),
- [Similarity Analysis](#),
- [Default Links View](#),
- [Display Setting for Header](#)
- Display Settings For Requirement - Allows users to:
 - Enable** to include the "All" tab in an open form.
 - Enable** to include the Transition buttons at the top of the open form.
 - Enable** to include the Work Flow State Description.

- Direct URL - Allows user to **Enable** to create a Requirement URL that opens in context.

Concurrent Editing

This setting can only be changed in the **Instance Settings** dialog.

Disable: Lock Requirements while editing - users will not be able to open a requirement object for editing while it is locked (i.e., open by a team member in edit mode). Users are notified that the item is locked and by whom.

Enable: Allow concurrent editing and merging - multiple users are allowed to modify an object at the same time. When concurrent editing is allowed, a dialog is raised when a user attempts to save an object that was modified and save while they were working. See ["AI-Powered Generation and Review" on page 192](#).

Most organizations choose concurrent editing, as the merge facility works well.

Display Settings for Classes

This setting can be changed in **Instance** or **User Settings**.

Limits the classes displayed, by default, and controls the order in which they are displayed. This allows analysts, for example, to list Functional requirements first and to limit the default list to exclude test cases and defects.

Users must **Disable: Use Instance Settings** in order to make modifications.

All classes available for access are included in the **Available Classes** list on the left. Users may choose a subset of those available to include on the **Selected Classes** list on the right. The up and down arrows can be used to change the display order.

When a subset of classes is selected for display, choosing All Classes in dialogs, including Quick Search, lists the selected classes in the selected order. The Show More button is available at the bottom of the list to include all remaining classes. To Modify Display settings by Class within Category:

Below the Selected classes list is the **Settings per Category** box which raises the dialog to specify a different set of classes within selected categories.

To modify class settings within category:

1. Click the **Settings per Category** box.
2. Select the category for which you want to change the displayed classes.
3. Clear the **Inherit from parent category** option.
4. Select the desired classes
5. Repeat 2-4 for every category to be modified.
6. Click **Save**.

Display Settings for User Attributes

This setting can only be changed in the **Instance Settings** dialog.

The Display setting for User Attributes defines how the content of attributes containing user identifiers are displayed throughout the system. This setting affects not only attributes defined locally, e.g., list of users assigned as reviewers

or testers, but also the system attributes used to display the user who initially created an object (**Initial Created By**) and who created or modified an object version (**Created By and Modified by**).

To change the display settings execute the following:

1. Select **Instance Settings** from the **Administration** menu.
2. Select **Requirements**.
3. In the Display Settings for User Attributes section, select one of these options:

Show User ID: Shows only the user ID, e.g. Corporate Identifier.

Show User Full Name: Shows only the user's full name, e.g. Ryan Forbes

Show User Full Name and User ID: Shows the user's full name and ID, e.g. Ryan Forbes (Corporate Identifier).

Show User ID and User Full Name: Shows the user ID and the full name, e.g. Corporate Identifier (Ryan Forbes).

Display Settings for Categories

This setting can only be changed in the **Instance Settings** dialog.

The Display setting for Categories allows the administrator to choose the most reasonable setting for category paths based on the format and depth of the structure defined for the instance.

In the **Display Settings for Category** section choose one of the following radio buttons:

Show Full Path: Always display the full category path, e.g. RMDemo\TAM\Doc\Administration

Show Name only: Display only the tip, e.g.: Administration

Show Name with 'n' parent(s): Display the tip plus a selected number of parents, e.g. with one parent selected: Doc\Administration

Display Settings for Lists

This setting can only be changed in the **Instance Settings** dialog.

This option defines how multi-line text attributes behave in all requirement lists.

Enable: Display all lines will display full content.

Enable: Display first line only will display the first line of each entry

Enable: Display first line only - expand on select will display the first line, when the entry is selected the full content will be visible.

Note that **Attributes that allow selection of multiple values** will attempt to show all values on one line with a character separating those values:

List attribute: Multi-Select List attribute values are separated by a pipe (|) character.

User attribute: User attributes values are separated by a comma.

Group attribute: Group attribute value sets are separated by a comma.

Special attributes: The values listed for Special Attributes (e.g. <Collections>, <Baselines>, <Documents> <Chapters>, <Snapshots>, <Containers>) are separated by a comma.

Display Settings for Requirements

The attributes in the requirement forms are segmented into named tabs, e.g., Custom, System, History. The **All** segment, when selected, makes **every** segment available for expansion and access.

Enable: Include the **All** tab on the Requirement Form.

Disable: The All tab will not be shown on the top of the requirement form.

Workflow Settings

This setting can only be changed in the **Instance Settings** dialog.

In workflow definition, the process applied may include **Automatic Transitions**. For example, rules may dictate that once a functional requirement has been assigned a title, a description, and a development effort, the object will be transitioned to the next state, without user intervention.

As designed, this automatic transition is only applied to the latest (current) version of an object. This setting provides the facility to allow automatic transition on non-current objects (e.g. requirements with current status "Replaced").

Enable: Execute automatic transition on non-current objects to allow automatic transitions to be applied to objects with a current status that is not current.

Text Field Height

This setting can only be changed in the **Instance Settings** dialog.

The **Text Field Height** setting defines the default height applied to each text box (e.g., description).

The following options are available:

Auto: The default behavior.

Fixed: Selecting this option allows the instance administrator to enter the height of the text box in pixels. Values must be between 50 and 2147483647.

Copy Options

This setting can only be changed in the **Instance Settings** dialog.

The **Copy Options** settings establish the default behavior for a requirement created using the **Copy** action. Administrators may determine whether or not the copied requirement will be added to the collection(s) and/or document(s) in which the source is a member. This setting also establishes the default for whether links are included in the copied object.

Enabling the copied requirement setting as the default depends very much on the process in place for the organization. Teams that are, for example, document focused (i.e., perform most functions from within a document) will,

generally, intend that a copied requirement will be modified and remain part of the document, as well as any collections in which the source is contained.

The following options are available and are independent of one another - all may be enabled. This sets the defaults for the **Copy** Action, settings may be changed as part of the **copy** dialog.

Enable: Add copied requirements to same collections as original requirements - will cause, as the default, the option to include a newly created object to be included in all collections in which the original is a member.

Enable: Add copied requirements to same documents as original requirements - will cause, as the default, the option to include a newly created object to be included in all documents in which the original is a member.

Enable: Copy links from original requirements - will cause, as the default, the option to include all links in a newly created object that were associated with the original.



NOTE

The options listed above will not apply when creating a document using the option to copy **Chapters and Requirements**.

Change Proposal

These settings can only be changed in the **Instance Settings** dialog.

These settings apply only when the organization using the Actions **Propose New** and **Propose Change** as part of their process. The process surrounding these actions involves allowing users to propose new requirements, rather than to create them, and to propose changes to existing requirements rather than to make the change. Proposed requirements and/or changes can be reviewed and accepted by team leads prior to acceptance. A similar process can be adopted using **workflow**.

For further information about proposing requirements, see chapter ["Proposing a New Requirement"](#) on page 121.

The following options are available and are independent of one another - all may be enabled.

Enable: **Make Change Reason mandatory for Propose New** - will force the user to include the reason for the change when using the Action Propose New to propose, rather than to create, a new requirement.

Enable: **Make Change Reason mandatory for Propose Change** - will force the user to include the reason for the change (attribute Change Reason) when using the Action **Propose Change** to proposing a change to an existing requirement.

Enable: **Propose Change for non-current objects** - Allows user to propose a change to a non-current object (e.g. requirements with current status "Replaced").

Suspect Links

Please note that the first two settings can only be changed in the **Instance Settings** dialog.

However, if the administrator has chosen to enable the option 'New Version Automatically Clears Suspect Links', the cautious users may choose to override that setting in **User Settings** by requiring confirmation.

Suspicion is raised when a related requirement is changed, for details see ["Suspect Links" on page 158](#). A Business requirement may elicit a dozen functional requirements, but what happens when the business requirement is changed? The implemented process may decree that each of these linked requirements become **suspect**.

Suspect is a system attribute maintained in every class; this attribute is set to 'True' when change to a linked object raises suspicion which suggests a review.

The following options are independent of one another - both may be enabled.

Enable: Visualize upstream and downstream suspect links - an arrow, rather than the suspect triangle, will display the direction of the requirement that caused suspicion to be raised. If the requirement is upstream a down arrow will be displayed to mark suspicion, it downstream an up-arrow.

Enable: New Version Automatically Clears Suspect Links - When this option is enabled, suspect links are automatically cleared when the suspected requirement is modified and saved. If this option is not enabled, suspect links must be cleared manually when saving a modified requirement.

The following setting is only actionable by the user if the 'New version Automatically Clears...' has been enabled in **Instance Settings**.

Enable: Confirm clearing suspect links on Save - When enabled, a dialog is raised which allows the user the opportunity to review and confirm the clearing of the suspect link.

Change Class

These settings can only be changed in the **Instance Settings** dialog.

These **Change Class** settings define the behavior when changing the class of a requirement. ["Changing the Class of a Requirement" on page 135](#)).

The following options are available and are independent of one another - all may be enabled.

Enable: Retain Workflow State - The **Workflow** state of the originating object is applied to the new class, provided that both the new class and the originating class have a workflow state with the same name.

Enable: Retain Links - Links will be preserved, provided that matching relationships exist in the new class. The **Links** section of **Change Class** dialog shows which links can be retained and which links will be removed when executing the change. If not enabled, no links are retained.

Comments

This setting can only be changed in the **Instance Settings** dialog.

Enable: Include Accepted state

Depending on the process implemented, the **Accepted State** of a comment may be included in the display and may also be used to provide a mechanism for filtering comments in the accepted state.

Glossary Check

This setting can only be changed in the **Instance** Settings dialog.

The **Glossary Check** settings control the response when a user includes a term in the text attribute that is listed in the glossary as "Not Recommended".

Disabled: When enabled, glossary check is disabled.

Warning: When enabled, a warning is raised at time of submission prompting the user to reconsider the use of the term, or to continue. The submission is not blocked.

Error: When enabled, a message is raised at the time of an attempted submission indicating that the term cannot be used in the requirement text. The submission is blocked.

Complexity Analysis

This setting can only be changed in the **Instance** Settings dialog.

Natural Language Processing based on the Flesch–Kincaid readability tests, has been implemented in order to review and to raise warnings concerning the complexity of requirements. For a complete description of these settings, please see ["NLP Complexity Analysis" on page 208](#).

Similarity Analysis

This setting can only be changed in the **Instance** Settings dialog.

Natural Language processes designed to analyze sentence similarity or semantic textual similarity has been implemented. For a complete description of these settings, please see ["NLP Similarity Analysis" on page 209](#).

Default Links View

This setting may be changed in both **Instance** and **User Settings**.

There are two ways to display links in the **Links** section of the Edit dialog.

Enable: Quick - Lists all linked requirements, no matter the class, in a single table, with only common attributes available for display.

Enable: Extended - List linked requirements by class, with the properties function available to list any and all attributes in the class.

Display Setting for Header

This setting can only be changed in the **Instance** Settings dialog.

The **Requirement Header Options** establish the attributes to be displayed when a versioned object (e.g., requirement, test case, etc.) is opened for viewing or editing. It is possible to enable one, two, three or none of the options listed below.

Enable: Class Name - Includes the **Class Name** in the header of an open object.

Enable: Rqmt ID - Includes the **Rqmt ID** in the header of an open object.

Enable: Title - Includes the **Title** in the header of an open object.

Test_Case: TC_0017 - Define Release Dependencies 

Figure 2-1. Header for Test Case, with Rqmt. ID (PUID) and Title enabled.

Quick Search Settings

The Class selection under the User Settings, Quick Search Tab provides users with the ability to choose personal defaults for the attributes included when requirements of each class are listed.

The most frequent route to this dialog is the columns icon  **Columns** available from most list dialogs. If your organization supports a large number of classes, this dialog can look quite daunting, but you need only change one class at a time.

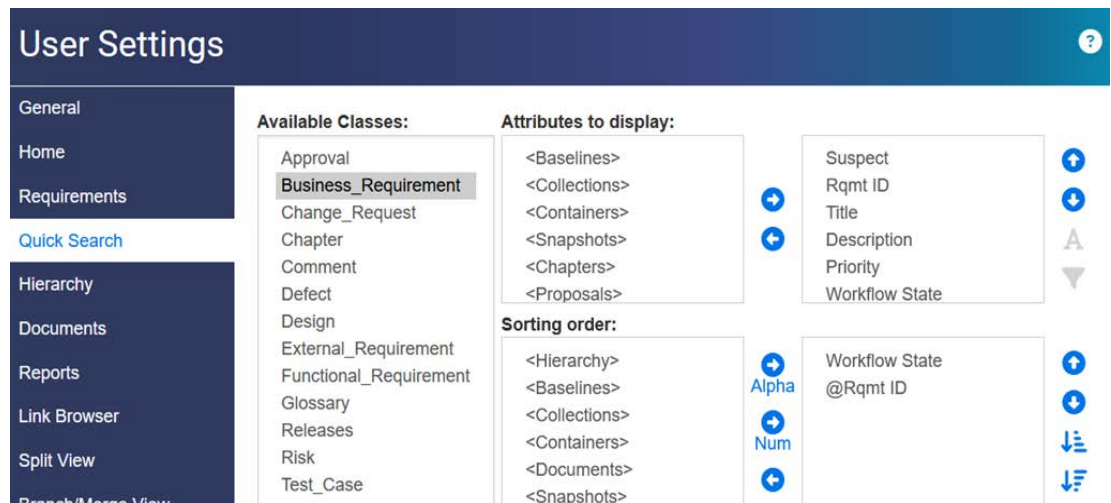


Figure 2-2. Changing the Attributes to Display for a selected class.

To change the attributes (columns) displayed in a Class list:

- 1 **Select a class** from the **Available Classes** list.

Once a class is selected, the current settings for **Attributes To Display**, **Sorting Order** and **Tooltip** are displayed.

- 2 If the selections are grayed out, disable the User Instance Settings. It appears below the Available Classes list, and, if enabled, If it looks like this:

 Use Instance settings

Disable it! Otherwise, you will continue to use the Instance Defaults.

- 3 **Attributes to Display:** Use the arrows to move attributes on or off the display list. For additional detail see ["Choosing the Attributes to Display" on page 40](#).
- 4 **Sort Order:** Use the arrows to choose the sort order. You may any attributes, alpha or numeric. For additional detail see ["Sorting Order List" on page 40](#).
- 5 **Document publishing**, you may choose to include an attribute to display as a tooltip when hovering over, for example, the Requirement ID.

Use the arrows to choose the default attribute to display in a tooltip.

Additional Settings Available in the Quick Search Settings

Automatically run default query: Select this checkbox to execute the most recently used search when the page is opened. If this feature is not enabled, the Quick Search fields will be populated, but the search will not be executed until the search button is clicked.

Use Instance settings: Select this checkbox to override local *pagination settings* with those set by your administrator at the instance level.

Activate Pagination: Check this box to apply instance defaults for pagination, uncheck it to specify the **Page Size** (number of records displayed per page).

Hierarchy Settings

The following are set from the **Hierarchy Settings** tab in User Settings (under the User Menu) or Instance Settings (from the Administration Menu).

Hierarchy Tree, Tooltips, and Export

The **Hierarchy** settings define which attributes are displayed in the hierarchy tree, the attributes displayed as tooltips when a user hovers over the hierarchy entry, and the attributes to be included in an export.



NOTE

The **Use Instance settings** checkbox must be cleared for each class, before class related settings can be changed; this setting is located just below the '**Attributes to Export**' section.

To change the attributes (columns) displayed:

Select a class in the **Choose a class** list:

The current settings for **Attributes To Display**, **Attributes to Display in the Tooltip**, and **Attributes to Export in the selected class** are displayed.

Specify the columns to display, see chapter ["Choosing the Attributes to Display" on page 40](#).

Specify the attributes to be displayed in the tooltip, choose those attributes most helpful when mousing over entries in the Hierarchy tree. List selection works much the same way as described in chapter ["Choosing the Attributes to Display" on page 40](#).

Modify the Attributes to export list, see chapter ["Choosing the Attributes to Display" on page 40](#).

Add Requirements at

The **Add Requirements at** option defines at which position in the hierarchy requirements are added when no designation is clear (i.e., add child, add below, etc.):

Start of hierarchy: Adds the requirement as the first requirement.

End of hierarchy: Adds the requirement as the last requirement.

Order

The **Order** option defines how the Hierarchy View displays folders and requirements.

Folders before requirements: Categories are displayed first, requirements follow the last category.

Requirements before folders: Requirements are displayed first, categories follow the last requirement.

Document Settings

The following can be set from the **Documents** tab in **User Settings** (under the User Menu) with exceptions noted, or Instance Settings (from the Administration Menu).

The document settings include:

- [Export Options](#),
- [Autoloading Documents](#),
- [Lock Document During Edit](#),
- [Default Requirement Layout](#),
- [Default Document View Mode](#),
- [Add Requirements at](#),
- [Default Workflow](#),
- [Move Objects](#),
- [Inline Editing](#),
- Add New Objects Inline, see [Inline Editing](#)
- [Import Export with](#),
- [Manage export templates](#).
- [Dynamic loading](#)

Export Options

In Documents View in RM Browser, requirements and chapters are typically numbered by default. When a document is exported using Microsoft® Word the Word document will include the numbers as displayed in Documents View, unless this setting is overridden by the administrator. If, in instance settings, the administrator has not checked the "Export Chapter Title numbering" box, chapter numbering will not be exported. The same is true for Requirement Title numbering.

As Dimensions RM supports many approaches to chapter and requirement numbering when exporting documents using Word, it is recommended that this single setting should not be relied upon to control chapter or title numbering for all. Please see: ["Exporting Documents" on page 287](#).

Use Instance settings:

When this checkbox is cleared by a user, the actual instance settings for the two associated boxes will be displayed; these may be cleared or checked.

Export Chapter Title numbering:

Clear this check box to clear automatic numbering, allowing the user to use Word settings to assign chapter numbers.

Export Requirement Title numbering:

Clear this check box to clear automatic requirement numbering, allowing the user to use Word settings to assign numbers to listed requirements.

Click **OK**.

Autoloading Documents

Selecting autoload will cause the document that was opened in the previous RM Browser session to be automatically opened.

To automatically load a previously open document:

Enable Auto load document.

Click OK.

To disable automatic loading:

Disable Auto load document.

Click OK.

Lock Document During Edit

This setting can only be changed in the Instance Settings dialog.

If this option is enabled, the system automatically ensures that only one person can open a document in edit mode. A concurrent user opening the document is notified that the document is locked.

If this option is **not** enabled, an open document may be manually locked or, in the event that several users simultaneously edit a document, edits may be merged.

Manually Locking an individual document:

Users may 'declare' ownership of a document over time by selecting the **Lock** function under the **Actions** pane. The document will remain locked, even across multiple edit sessions, until the user chooses to unlock it. Should the user inadvertently leave the document locked, an administrator may unlock it (see ["Managing Requirement Locks" on page 530](#)).

While a document is manually locked, other users opening the document will receive a warning that the document has been opened in read only mode; the *name of the user responsible for locking the document is displayed to the right of the document title*.

Merging document edits:

The following discusses the merge operation, should 2 users modify the document simultaneously. The users in this example are JOE and EPHOTO:

Example 1:

JOE adds a chapter. EPHOTO adds a chapter after JOE.

EPHOTO will find JOE's chapter in his document tree, but JOE will not find EPHOTO's chapter in his document tree.

Resolution: JOE must click  to refresh the document tree.

Example 2:

Both, JOE and EPHOTO, open the same chapter for editing. JOE saves his modifications first.

EPHOTO receives a warning that JOE made changes and that his changes can only be saved after the conflict has been resolved. For further information about resolving conflicts, see chapter ["Merging Concurrent Document Changes" on page 254](#).

Default Requirement Layout

The **Default Requirement Layout** option defines the initial layout for requirements in a document.

To change the default requirement layout:

In the **Document Settings** section, select one of these options from the **Default Requirement Layout** list box:

Editable Grid

Grid

Paragraph

Click **OK**.

Additional changes to the layout may be applied using the **Format Document** or **Format Chapter** settings as described in chapters ["Formatting Documents" on page 245](#) and ["Formatting Chapters" on page 261](#).

Default Document View Mode

The **Default Document View Mode** defines how documents will be displayed when first opened. There are two basic modes, **Chapter** and **Entire Document**, with additional, personal, views available.

This setting can also be changed from an open document, see chapter ["Detail Pane" on page 218](#).

Chapter: Displays the Document one chapter at a time.

Entire Document: Allows the user to scroll through the entire document.

Add Requirements at

The **Add Requirements at** option defines at which position in a chapter the requirements are added when the chapter is selected:

Start of chapter: Adds the requirement as the first requirement.

End of chapter: Adds the requirement as the last requirement.

Default Workflow

The **Default Workflow** setting allows users to select a default from among workflows defined for documents and snapshots. This default can be changed during document creation.

Move Objects

Enabling **Move Objects** protects against erroneous moves using drag-and-drop.

Once enabled, the system requires confirmation when drag-and-drop is used to relocate objects between categories or entries in the Hierarchy.

Inline Editing

Inline editing allows users to edit and add document content seamlessly, without opening the chapter or requirement in Edit mode.

Enabling **Inline Editing** sets the default to **on** when working in an open document.

Add new Objects Inline

Add new Objects Inline enables users to add new requirement objects inline, without opening the New requirement dialog. Note that the only attributes available for input will be those included in the attribute display; some organizations may prefer to use the full form.

Enabling **Add new Objects Inline** sets the default to **on** when working in an open document.

Import Export with

Select the Default Setting for importing and exporting documents using Word. The Java (Docx4j) Library is available for organizations that cannot install Microsoft Office on the server.

Microsoft Office

Java (Beta)

Manage export templates

Select a default export (formerly publish) template.

Dynamic loading

when size exceeds (number of objects, default=500)

Load Objects on Scrolling:

If enabled: Documents that exceed the number of objects entered above, loading will be managed dynamically. The initial load will include only what you see, with expansion initiated with scrolling.

Load objects in the Background:

If enabled: Preload the document, irrespective of size. This setting is not recommended for projects processing large documents.

Report Settings

• Relationship Constraint Mode Settings

This setting can only be changed in the **Instance Settings** dialog.

With the **Relationship Constraint Mode** setting, the Instance administrator defines how the relationship (specified as a **Relationship Constraint** for the executed report) between two requirements is evaluated.

Only Current:

Enabled: This means that a report will return only related requirements with Status "Current". Enabled is the default setting for **Only Current**.

Disabled: By disabling the **Only Current** setting, a report will return a related requirement even if its Status is other than "Current" (e.g. Proposed, Deleted, Replaced).

This setting affects the relationship evaluation in either direction, outgoing relationship (e.g. from Business requirement to Functional) and incoming relationship (from Functional to Business).

If, for example, a Business Requirement is linked to a Functional Requirement that has been marked as deleted (Status = Deleted), the report will **not** return this relationship.

• Traceability Default View

Traceability reports can be displayed in either Gap View (an excel report that displays the missing links) or a structured Outline View.

To set the default view:

1. In **Traceability Default View**, select **Gap** or **Outline** from the list box.
2. Click **OK**.

• Truncate Text Attributes to

This setting can only be changed in the **Instance Settings** dialog.

In order to support the use of HTML text in graphical reports, provide a parameter to define the maximum length used in the report.

This setting can be useful for organizations that, for example, start a description with the 7 digit request identifier that initiated it. The request ID alone can be included as a label in the graphical report by setting the *Truncate Text Attributes to 7* and using an HTML formatted description in the graphical report.

Link Browser Settings

The Link Browser Settings control the color, format and attributes of the display, as well as the attributes displayed for Links In and Links Out details.

Users must Disable: **Use Instance Settings** in order to make modifications.

To change the class color using predefined colors:

Choose a class from the list

Choose a Color from the color squares

Click OK

To define a class color using the Color Picker

Choose a class from the list

Do one of the following:

1. Use a color range:

From the vertical color bar, select the color range.

Select the color in the preview box.

2. Mix a color using H (hue), S (saturation), and V (brightness)

H: Valid range 0 to 359

S: Valid range 0 to 100

V: Valid range 0 to 100

3. Mix a color using R (red), G (green), and B (blue) box.

The valid range for R, G, and B is 0 to 255.

4. Mix a color using the hex value.

The hex value follows the RGB schema. Each color is represented by 2 characters,.

For example, #ffeedd means R (ff)=255, G (ee)=238 B (dd)=221.

Click OK.

To change the node radius:

Do one of the following:

1. Enter a number (minimum 40) into the **Node radius (px)**

2. Enable the Fit to PUID check box.

This is recommended and will adjust the node radius to fit the attributes selected for display.

Click OK.

To change the Attributes to Display

To allow modification of the **Attributes to display** or **Attributes to display in tooltip** lists, ensure that the **Use Instance settings** box is cleared.

The Items selected for Attributes to Display are included in Links In and Links Out Details.

The selection of Attribute in both links display and tooltips work in the same way as described in ["Choosing the Attributes to Display" on page 40](#).

However, the following restrictions apply:

The display is limited to 3 attributes as to avoid unreadable text in the requirement node.

Special attributes are not supported. For a list see ["Special Attributes" on page 57](#).

Split View Settings

The settings for the Split View mode of Quick Search may be modified from the **Split View** tab in User Settings (under the User Menu) or Instance Settings (from the Administration Menu).

Users must Disable: **Use Instance Settings** in order to make modifications.

To change the columns displayed in Split View:

Select a class from the list.

The **Attributes To Display** and **Sorting Order** sections are displayed.

Specify the attributes to display, for assistance see chapter ["Choosing the Attributes to Display" on page 40](#).

Specify the sort order, see chapter ["Sorting Order List" on page 40](#).

Click Apply if additional classes will be modified

Automatically run default query:

Enable: Run the most recently used search criteria when the page is opened.

Disable: Use the most recently used search criteria, but do not execute until you click the search button.

Activate Pagination:

Select this option to break the results up into multiple pages if they exceed a certain quantity. Specify that quantity in the **Page Size** field

Notification Settings

These settings can only be changed in the **Instance Settings** dialog.

The Notifications Settings provide dialogs for the Instance Administrator to create rules for Email notifications or Alerts. The UI alerts are an effective way for users to receive notification that objects they have elected to **follow** have been changed.

Notification Settings:

The method chosen for delivery may be via email, browser alert or both.

Email - Notifications will be sent via email.

Note that Emails will only be sent if the Open Text Mail Service has been activated. For further information see ["Configuring E-Mail Notification" on page 772](#).

UI Alerts- Notifications will be raised as User Alerts in the Browser, see ["Enabling and Disabling Notifications" on page 63](#).

Type: Notification text may be configured for messages relating to Requirement objects (General), Chapters, and Comments.

Email Subject: The subject text may be localized, however the placeholder (e.g, <#PUID#>) should remain unchanged.

Email Text: The text of the message may be localized, and additional placeholders may be included.

In addition to the Email or Browser alerts discussed in this section, users may activate selected Notification Rules from the Notifications tab under the User Menu. For details, please see ["Enabling and Disabling Notifications"](#) on page 63

Risk Management Settings

This tab may only be configured from the Instance Settings.

The Risk settings define the configuration structure for Risk Management Reporting, in fact, the Risk Management settings define the report. Once configured, the Risk Tab will be available from Home View. For reporting details, see ["Risk Management Reporting" on page 312](#) for detail.

Risk Management Reporting uses the attribute names defined for the instance in schema definition. The reports were designed to use color coding to calculate and to display the current risk threat. Both color choices and attribute display names may be modified.

DASHBOARDSDOCUMENTSREQUIREMENTS (71)BOARDS (1)RISKS (4)REPORTSCOLLECTIONSBASELINESGLOSSARY

▼

📁

Filter risks...

🔍

🔗

🔗

PUID	Title	Severity Rating - Initial	Occurrence Rating - Initial	Severity Rating - Final	Occurrence Rating - Final	Risk Priority - Initial	Risk Priority - Final
RISK_1	Performance goals...	3	3	2	2	High	Medium
RISK_2	SLA not reached	3	2	2	1	High	Medium
RISK_3	Data loss in integr...	4	2	4	2	Extreme	Extreme
RISK_4	Increasing round-tr...	2	2	2	3	Medium	High

Figure 2-3. Status Report from Home View, Risks Tab

Instance Settings - Risks Tab

Describe the Levels:

Names: Choose the severity level names, e.g., Low, Medium, High, Extreme

Colors: Choose relevant colors (for details see ["Link Browser Settings"](#) on page 87).

Description: Enter a short, optional explanation.

Icons allow the deletion or the reordering of rows.

Name		Color	Description									
Low			Description	×	↑	↓						
Medium			Description	×	↑	↓						
High			Description	×	↑	↓						
Extreme			Description	×	↑	↓						
	×	←	→	×	←	→	×	←	→	×	←	→
Severity:	Acceptable	Tolerable	Undesirable	Intolerable								
	Little to no effect on event	Effects are felt, but not critical to outcome	Serious impact to the course of action and	Could result in disaster								

Risk Matrix Calculations:

The Risk Matrix is based on the Severity level should an issue occur, together with the chance of it occurring.

There is suggested text, however the names assigned for both severity level and probability of occurrence can be defined by the instance administrator.

Severity: Define, with a short description, the severity levels. The down-arrow in each color square provides access to the severity levels.

Occurrence Rating: How likely is it that the issue will occur.

	Severity: Acceptable Little to no effect on event	Tolerable Effects are felt, but not critical to outcome	Undesirable Serious impact to the course of action and outcome	Intolerable Could result in disaster
Occurrence:				
Improbable Risk is unlikely to occur	Low	Medium	Medium	High
Possible Risk will likely occur	Low	Medium	High	Extreme
Probable Risk will occur	Medium	High	High	Extreme

Test Management Settings

When **Test Management** has been implemented and enabled, the **Test** view will be available for selection from the main menu bar:



For additional details see ["Working with Test Management" on page 410](#).

Test Management:

This setting can only be changed in the **Instance Settings** dialog.

When enabled the Test Management and Views are activated.

Runtime Dialog

This setting can only be changed in the **Instance Settings** dialog.

When enabled the estimated and actual run times will be tracked and displayed after all Test Steps have been completed.

Tests Ordering in Test Suite

This setting can only be changed in the **Instance Settings** dialog.

When enabled the Test Cases listed within a Test Suite may be reordered.

Pagination

Users may enable this option to break the list display in the **Test** view into multiple pages should the list exceed the quantity entered in the **Page Size** field.

Open Objects

Users may enable this option to control how objects in Test Management classes are opened from within the Test View.

For example, when editing attributes, test related classes may be opened using the standard Edit Requirement dialog, however the recommended practice is to choose "Open in Test Management View" Select one:

- Open in Edit Dialog
- Open in Test Management View - Recommended
- Always ask how to open

Status Colors

This setting can only be changed in the **Instance Settings** dialog.

Execution Status is a list attribute defined in the **Test Run** class.

In our example, this list includes: Blocked, Executed, Failed, In Progress, Not Executed, Not Planned, Passed, Passed with Deviations. Administrators may apply local naming conventions to the states defined.

For each state, a color code may be selected to further classify the state name. For additional color selection details see ["Link Browser Settings" on page 87](#))

Branch Merge Settings

Displayed Columns

Branch/Merge settings allows a separate set of columns can be selected for display in the Branch View mode of Quick Search.

Users must disable Use Instance settings: to override the default settings set by your administrator at the instance level for the selected class.

To change the columns displayed in Branch View mode:

Select a class in the **Choose a class** list. The following sections are displayed:

Attributes To Display Specify the columns to display, see chapter ["Choosing the Attributes to Display" on page 40](#).

Sorting Order Specify the sorting order see chapter ["Sorting Order List" on page 40](#).

Attributes to Display in Details Specify attributes to highlight when viewing changes for listed attributes.

The following are only available from **Instance Settings** and control the attributes to be provided with branched requirements and then merged:

Attributes to provide/merge from **Project to Product**

When branching requirements, not all attributes will be copied to the branch, only those that should be merged when the time comes. Only user populated attributes are included in the list.

The Instance Administrator must choose the Attributes to be provided to the branched requirement when branching from Project to Product

Attributes to provide/merge from Product to Project

When branching requirements, not all attributes will be copied, only those that should be merged when the time comes. Only user populated attributes are included in the list.

The Instance Administrator must choose the Attributes to be provided to the branched requirement when branching from Product to Project

Additional Settings

Branch with Links: Enabling this option ensures that a branched requirement will include links.

Activate Pagination: Select this option to break the results up into multiple pages if they exceed a certain quantity; specify that quantity in the **Page Size** field.

Security

This section defines settings associated with application security.

These settings, available from **Instance Settings, Security** Tab, can only be changed by the Administrator.

These settings include:

[Client Idle Timeout](#)

[Upload File Restrictions](#)

[Attachment Opening](#)

[Sanitize HTML Code](#)

[Show Last Login Date for User](#)

[Include Login Information in Administrative Audit](#)

The following indicate the RM Recommended Security Settings:

Session Idle Timeout minutes

Upload File Restrictions

☐ Allow all file types

☐ Allow these file types

☒ Disallow these file types

Attachment ☒ Disable automatic opening

Sanitize HTML code ☒ Enable

Show Last Login Date for User ☒ Enable

Client Idle Timeout

After a period of inactivity, an RM Browser session times out, causing users to be logged out of the RM Browser. A login dialog is raised, allowing users to log in again.

The session idle timeout defaults to 30 minutes. The Instance Administrator may change the number of minutes users are allowed to remain idle by setting the number of minutes in the **Client session idle timeout (minutes)** box.

Upload File Restrictions

By selecting this function, administrators can select the types users are allowed to upload.



IMPORTANT! For reasons of security and safety, it is recommended that Administrators create a whitelist and use it to populate the list following instructions in number 1 below.

From Instance Settings, Security Tab, Upload File Restrictions

Select one from the following:

1 Allow these file types:

This setting limits the upload possibilities to the file extensions listed. No other file type can be accepted for upload. *This is the recommended setting.*

2 Allow all file types:

This setting allows users to upload files of any type, including potentially dangerous files like, for example, executables.

3 Disallow these file types

This setting forbids users to upload files of any of the specified file types. Any other file type can be uploaded.

4 Click **OK after changing the settings.**

Attachment Opening

To **FORCE** users to save attachments locally before they are opened, automatic opening *must* be **DISABLED**.



IMPORTANT! For reasons of security and safety, disabling automatic opening forces RM Browser users to save file attachments before opening.

To **Disable automatic opening** execute the following.

From Instance Settings, Security Tab, Attachment

Enable the selection for: **Disable automatic opening**.

Click **OK**.

Sanitize HTML Code



IMPORTANT! For reasons of security and safety, it is recommended that the setting **Sanitize HTML** code be enabled.

To enable the examination of HTML content, preserving only those tags and attributes designated "safe", execute the following.

From Instance Settings, Security Tab:

At the **Sanitize HTML code** option, **Enable** the tab.

Click **OK**.

Show Last Login Date for User

To enable the display of the user's last login date in the browser footer:

From Instance Settings, Security Tab:

At the **Show Last Login Date for User** option, **Enable** the tab.

Click **OK**.

Include Login Information in Administrative Audit

To include user **Login** information in the list of Actions available on the Administrative Audit:

From Instance Settings, Security Tab:

At the **Include Login Information in Administrative Audit** option:

Enable the tab.

Click **OK**.

Configuring Actions Pane Defaults

Administrators or Users have the ability to select the functions listed in the Actions pane. This allows non-common functions to be hidden, e.g. the *Remove* command for removing requirements, an Action that is almost never allowed.

To configure actions, do the following:

- 1** Move the mouse pointer over the section title, e.g. Requirements.
- 2** Select the mode for editing
 -  Click to edit instance settings. This option is only available for administrators.
 -  Click to edit user settings.
- 3** Update the Action boxes:
 - Check the box to display.
 - Clear the box to Hide
- 4** Click  to confirm your selection.

Chapter 3

Working with Requirements

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Requirements in Dimensions RM

Requirements Management is the process through which we ensure that the needs defined for a project or product are identified, documented, analyzed, and managed throughout development and on into maintenance. The better the requirements, the fewer the surprises.

Dimensions RM manages requirement types (e.g., customer, functional, software, system, hardware) in classes. Stored within the class are attributes, descriptive properties defined by the organization, e.g., title, description, targeted release, priority, risk. Additional attributes are defined and stored by RM to track the complete version history of each object.

Throughout this documentation, we often refer to the objects stored within RM as requirements, because each object expresses a need within the requirements management process. However, we track requirements, use cases, test cases, risks, defects, design, change requests, models, and any object associated with the hardware of software development lifecycle. The following sections describe methods for opening, managing and saving existing documents.



NOTE About Permissions

Security regulations regarding data stored in RM are crucial to many organizations as they are applied to protect information and to ensure compliance with national and international laws and standards.

Permissions in RM are controlled through Group Access. If the user group you are a member of does not have read permission to a category, you will not see the category or the objects stored within it.

When running reports and applying filters, you will only see the objects to which you have access

For details concerning Document Creation, see ["Document Creation and Maintenance" on page 230](#)

• **Listing Requirements for Review**

Requirements to which the user has read access, can be listed from any location.

For details, see ["The Various Ways of Listing Requirements" on page 99](#).

• **Creating Requirements**

One or all of the following methods may be used to create requirements:

- Enter and modify requirements using the **New** Action from any dialog.
For details, see ["Creating a New Requirement" on page 117](#)
- Import requirements from Excel or Microsoft Word files, see:
["Importing Requirements from Microsoft Word Documents" on page 384](#),
["Importing Requirements from a CSV or Excel File" on page 393](#)).
- Import requirements from another tool for example:

Open Text Solution Business Manager
Requirements Management Solutions using ReqIF
One of many solutions with which RM integrates.

- Use the RM Import functions to import from:
Existing corporate Word documents
The product managers excel sheets.

Requirement Evolution

Changes to existing requirements are made using methods similar to those used in creation. Changes can be imported or entered by users during review sessions. As the requirements evolve, their history is retained, allowing users to trace the evolution of a requirement from its initial creation through to the current (latest) version.

For details concerning requirement history, please see ["The History Section" on page 176](#).

The Various Ways of Listing Requirements

This section discusses:

[Current Status](#), an internal setting that identifies the state of a requirement.

[Methods for Listing Requirements](#), the basics for viewing and editing requirements.

Current Status

But first, a word about the Current Status (also referred to as Object Status) of all managed objects.

A special implicit attribute, Current Status, identifies the state of the requirement within RM. Current Status is a System Attribute, controlled by the system.

The possible values are described in the following table.

Current Status	Description
Current	This requirement version is the latest; the most recent version of the object. Changes made to this requirement will be applied to this, the current, version. When a user opens a requirement version that not current, the following message is raised: Warning: There is a newer object, you don't have permission to change this object. Open Current Version This may occur because the requirement was changed after the last time the view was refreshed, or the intent is to review an older version. Click the link to open the latest (current) version
Replaced	This requirement version has been replaced by a newer version.

Current Status	Description
Deleted	This requirement version has been marked as Deleted. Prior versions, those with a Current Status of Replaced, will remain unchanged. Should a user open a deleted requirement, a message will be raised indicating that no changes can be saved to this object.
Proposed	A change request has been made to either change the current requirement or create a new requirement. This status is only relevant if the team has chosen to use a Change Request process.
Accepted	A proposed change was accepted.
Rejected	A proposed change was rejected.

Methods for Listing Requirements

Objects are listed, often in grid form, throughout Dimensions RM. In the Quick Search View, and in lists from the Requirements Tab in Home, the attributes included in the display are controlled by the user. The instance administrator may choose defaults for each of the classes, however the user can override the default selection by:

- Changing "[Quick Search Settings](#)" on [page 81](#), or
- Clicking Columns:  Columns .

A Few Notes before we begin:

1 Selecting Multiple Requirements in the Quick Search View

Selecting objects listed in either grid or editable grid view it is possible to select more than one. The following selection methods are supported:

Ctrl+click to multi-select

Shift+click to select a block of requirements

Ctrl+A to select all requirements

If the requirements are shown in sections (e.g. in Quick Search when searching over several/all classes), **Ctrl+A** only selects the requirements in the active section.

2 Selecting multiples from the Editable Grid view in either Home or Quick Search view can be accomplished using the check boxes.

3 Select and Execute Actions

From the Quick Search List, Requirement Lists from Home, or from any report, document, collection or query listing throughout Dimensions RM, selecting an object will enable relevant Actions under the Requirement set on the Action pane.

To perform an Action on multiple requirements, highlight or one, several or all, and then click the relevant Action. For example: you might have performed a search for all items approved for release in order to use **Add to Collection**, or several requirements that you would like to **Follow**, etc. For details see "[RM System Attributes](#)" on [page 38](#).

4 Methods for Listing Requirements

From the **Quick Search** View, there are three methods available for listing, reviewing and editing requirements.

Editable Grid:    A list view supporting in-line editing [Editable Grid View](#).

Grid:    A scrollable list view [Grid View](#).

Form:    Supports the review of objects in an open form, one object at a time: [Form View](#).

Editable Grid View

The editable grid view is a list view supporting in-line editing directly into attribute cells. In addition, multiple objects can be selected allowing a single change to be applied to the modified attribute for each selected object. For example, when assigning multiple requirements to a release or changing priorities, the task can be accomplished in the Editable Grid for all selected requirements with a minimum of clicks.

Classes and Attributes: Marketing_Requirements System Attributes: Object Status Is Current					
    Load All   Page 1 of 1   Total number of pages/requirements - 1/25					
 Rqmt ID	 Title	 Text	Priority	Modified By	Delivery Phase
 MRKT_000001	EPhoto will be an online photo album	The ePhoto system shall enable the user to browse an online photo album. It shall look and feel like an electronic photo album, just like the one on the coffee table.	High	 Ryan Forbes	Build1 
 MRKT_000002	Support Advantix formats	The ePhoto system shall support photos that are Advantix (3 sizes) format originals with not less than 256 colors. Consideration should be given to the way that larger prints may be assimilated and a solution shall be chosen in part based upon such flexibility.	Medium	 Ryan Forbes	Build2

The following functions are available when using the Editable Grid:

Icon	Function	Description
	Refresh	Repopulate the objects listed with fresh data from the database.
	Apply changes	Clicking Apply Changes saves all unsaved changes. Unsaved Changes are displayed with a small (typically red) triangle in the upper right corner of the modified attribute cell.
	Undo Changes	Removes all unsaved changes, restoring objects to their original content.

Icon	Function	Description
	Create a new requirement	Clicking the plus adds a blank row to the bottom of the grid. If there are multiple classes in the grid, the row will be added to the bottom of the selected class. All user fields may be populated, system attributes, such as the requirement ID number and create date will be populated once you Apply changes .
	Load all Available Objects	This only applies in Quick Search, where all objects may not be loaded into the editable grid in order to avoid long wait times when the list is long. Clicking Load All loads all requirements of the executed query into the editable grid.
	Page Controls	When all objects have not been loaded into the editable grid, you can select or enter a specific page to view in the Page field. Or browse through the pages in sequence with the First Page , Previous Page , Next Page , and Last Page controls.

Concurrent Editing:

If the Instance is configured to support the recommended concurrent editing (see [Concurrent Editing](#)), a merge facility is available to assist in merging conflicting changes made to the same requirement. Please see details in Section [Merging Concurrent Requirement Changes](#).

Modifying Attributes in the Editable Grid

To edit a single attribute: double-click inside an attribute cell, and enter the changes.

Except for HTML enabled text attributes, editable cells allow these shortcuts:

Shift+Enter: Apply changes to cell and navigate to the same cell in the row above.

Ctrl+Enter: Apply changes to cell and navigate to the same cell in the row below.

To make the same change across multiple requirements:

- 1 **Highlight** all requirements to be changed,
- 2 **Double-click into the cell** of one requirement containing the **attribute**
- 3 **Set that attribute to the desired value (e.g., one instance of a drop-down list)**
- 4 **To Change All:** Click the cursor into another of the highlighted requirements, the change will be applied to all.
- 5 **Apply Changes:** All unsaved changes will be applied.

- **Note:** Modifications to the Workflow attribute in the Editable Grid

When selecting Workflow, if there are mandatory attributes associated with the target workflow, the user will be prompted to populate those attributes for the first requirement and those settings will be applied to all others. Workflow related changes will be applied through the save button on the open form.

- **Note:** Filter the entries or remove columns temporarily from the editable grid:

Limit the view to related requirements to make a bulk change simpler. For example, you can collect all the requirements assigned to Joe for review and assign them to Henry.

To apply filters:

Move the mouse pointer over the *title of the column* to be filtered. The  icon appears.

Click  and select **Filters**.

Select or enter the value for which you wish to filter the results.

Limit the view to specific columns of change, without changing your standard settings.

To remove columns:

Move the mouse pointer over the *title of the column* to be filtered. The  icon appears.

Click  and select **Columns**.

In the sub-menu, clear the boxes next to the column names you want to remove.

Grid View

The Grid or List View is a tabular view of requirements.

Click a column header to sort the requirements by that attribute.

To open a requirement for editing, double-click it or select the requirement and choose Open from the Requirements set of the Action pane. The requirement opens in the Edit Attributes dialog (see ["Editing a Requirement" on page 122](#)).

To perform other actions on the currently selected requirement or requirements, select the desired action from those enabled below Requirements in the Actions pane.

MARKETING_REQUIREMENTS 36							
Rqmt ID▲	Title	Text	Priority	Modified ...	Containers	Links Out	Delivery
MRKT_000001	EPhoto ...	The ePhoto system shall enable the ...	High	 Ryan ...	ePhoto - Release 1.1, eP...	 3	Build1
MRKT_000002	Support ...	The ePhoto system shall support ph...	Medium	 Ryan ...	ePhoto - Release 1.1, eP...	0	Build2
MRKT_000003	Runs on ...	The ePhoto system shall be accessi...	High	 Ryan ...	ePhoto - Release 1.1, eP...	 3	Build1
MRKT_000004	Annotate...	The user shall be able to annotate th...	Medium	 Ryan ...	ePhoto - Release 1.1, eP...	 5	Build3

Grid View Navigation Bar

From an Open requirement in the Grid View, a Navigation Bar, available at the bottom of the dialog, allows users to navigate to other requirements included in the list from which the displayed requirement was selected.

To hide the navigation bar, click **Hide navigation** bar. To show the navigation bar, click **Show navigation bar**. The navigation bar is not visible if there only one requirement in the query results. The name of the entity from which the list of requirements was generated is displayed in the navigation bar.

To navigate to the next or previous requirement in the query from which the requirement was generated, click the next  or previous  button.

To navigate to the first requirement or last requirement, click the first  or last  button.

Form View

The Form View is only available from Quick Search, and is only available for selection when only one class is returned by the Quick Search query. This view opens the requirement form, one requirement at a time.

The form view is often the display of choice when analysts are gathered to step through the requirements for a final review.

Attributes are grouped into expandable/collapsible sections by type. You can browse through the requirements in sequence with the **First**, **Previous**, **Next**, and **Last** controls.

To edit the current requirement, click the **Edit** button; the requirement opens in the Edit Attributes dialog (see ["Editing a Requirement" on page 122](#)).

To perform other actions on the open requirement, select the desired action from those listed below Requirements in the Actions pane.

Save, Update, Delete, Remove Functions

Dimensions RM allows users to define processes that address requirement modifications in several fundamentally different ways.

It is critical to understand the difference between these options and to choose the one that works best at each step in the process. Based on the permissions assigned by the Instance Administrator, not all may be visible.

Save creates a new version while maintaining a history of changes. This allows the team to trace change to a requirement over time. This is the recommended method for changing requirements to ensure auditability.

Update overwrites the content of the requirement version without maintaining a record of what was changed. This option, although not recommended for the life of the requirement, may work best during the definition phase or when correcting erroneous entries that need not be part of an audit. It is important to note that Trend reports, for example, require the history information to calculate the trend.

Delete marks the requirement as deleted and makes it unavailable for modification. However, it remains in the database and can be undeleted later on. By default, deleted requirements are not visible; however, you can query for them.

Remove removes the current version of a requirement from the database and makes the previous version current. Unlike Delete, a removed requirement cannot be restored.

Undelete restores a requirement which has been deleted with the Delete function.

Icons on the Open Requirement Header

Requirements can be opened for viewing or editing from just about anywhere by either double clicking the requirement, or highlighting the requirement and selecting **Open** from the actions listed below **Requirements** on the Actions pane.

Once opened, the requirement title pane, located at the top of the **Edit Attributes** dialog, provides access to a few common functions.

Icons	Description
	Allows the user to follow (request notification of change) the object, as well as to view those users actively following the object.
	Reloads the current dialog. Reloading will (with warning) lose any changes applied, returning the requirement to its original state.
	Opens the Print dialog
	Opens the online help.

The Open Requirement Actions List

The **Actions** drop-down, located at the top right corner of the open requirement dialog, lists Actions available dependent on user permissions, requirement class and workflow state, as well as the process defined for the instance.



Figure 3-1. The Header and Segments from an open Requirements Dialog

A typical list of Actions available from within the open Requirements dialog:

Action	Description
Link	Opens the Link Requirements dialog. For further information, see chapter "Create Link or Link Existing" on page 147 .
Create New & Link	Opens the New & Link dialog to create a new requirement and link it with the existing requirement, see "Creating a New Requirement" on page 117 .
Browse Links	Opens the Link Browser dialog. For further information, see chapter "Using Link Browser" on page 162 .
Add Comment	Opens a comment dialog, allowing a user to initiate a discussion thread concerning the text or process state of the object. For further information about comments, see section "Managing Comments in Requirements" on page 138 .
Propose Changes	Allows to create a change request based on the current requirement and links it to the requirement. For further information about creating change requests, see chapter "Submitting a Change Request" on page 136 .
Accept/Reject	Allows the user to review and to accept or reject a change request. For further information, see chapter "Reviewing a Change Request" on page 137 .

Action	Description
Add to Collection	Opens the Add to Collection dialog to add the current requirement to a collection. For further information about collections see chapter "Managing Requirements in a Collection" on page 368 .
Create direct URL	Opens the Requirement Link dialog containing the link to the current requirement.
Clear content	Clears all editable attributes of a requirement.
Refresh	Reloads the current dialog. Reloading a new requirement means that you will lose your entered or selected data.
Print	Opens the printable view and the Print dialog from which you can select a printer.
Class Information	Opens the Class Information dialog that provides details about attributes and Workflow states and transitions (if the class uses a Workflow). For further information, see chapter "Viewing Information about a Class" on page 106 .
Help	Opens the online help.

Viewing Information about a Class

When populating attributes on a class form or considering relevant workflow transitions there is always help available with **Class Information**. This action, available from an open requirement form, identifies and describes the attributes defined on the form

To view the **class information**, follow these steps:

- 1 Open a requirement or create a new requirement of the desired class.
- 2 At the top of the window, open the **Actions** box and select **Class Information**.

The **Information about class** dialog provides:

- A description of the class
- Workflow diagram (if the selected class uses a workflow)
- State descriptions
- Transition descriptions
- Detail concerning each Custom attribute
- System attribute descriptions

About Requirement Versions

When replacing a requirement, a new version of the requirement is created. These versions allow users to follow the change history of a requirement: who changed it, when was it changed and what was changed. It is also possible to compare any two versions of a requirement. For further detail, see chapter ["Viewing Requirement History" on page 176](#).

When opening requirements for modification, users may open a requirement that is not the current version; this often happens when the view is not refreshed as you work

through a set of changes. When this occurs, a warning message is displayed in the **Edit Attributes** dialog. This warning message disappears after 5 seconds; you can click the **Edit Current Version** link displayed which opens the current (latest) version.

Notification of Change with the Follow Action

When you want to be informed of changes made to requirements or documents important to a current set of tasks, it is possible to use the **Follow** action to subscribe to notifications. This feature allows users to be notified when selected requirements are changed. For details see ["Notification Settings" on page 89](#).

The **Follow** attribute may be selected to include the list of users Following a requirement using  **Columns** . See ["Choosing the Attributes to Display" on page 40](#).

Following a Requirement to Receive Notification of Change

To subscribe to change notification, highlight the desired requirement from any list and select Follow from the Requirements section of the Actions pane.

To subscribe to change notification from a requirement opened in the **Edit Requirements** dialog.

Click  in the requirement header to open the **Follower** dialog.

Click **Follow**; the follow icon changes color.

The Follower dialog also lists users subscribed to **Follow** this requirement.

Unfollowing a Requirement to Stop Change Notification

To unsubscribe from change notification from any list, highlight the desired requirement and select **Unfollow** from the Requirements section of the Actions pane.

To unsubscribe from change notification from an **Edit Requirements** dialog:

Click  in the requirement header to open the **Follower** dialog.

Click **Unfollow**, the icon changes color.

About Requirement Locks

Most organizations choose to allow concurrent editing (see ["Concurrent Editing" on page 75](#)), as locking tends to interfere with getting the job done. There is also a merge facility available to assist users in making sense of multiple changes, see [Merging Concurrent Requirement Changes](#).

While a requirement is locked, a lock icon is displayed in the dialog box banner. While locked other users cannot edit the requirement.

Locks are removed when one of the following occurs:

- The user closes the edit requirement dialog.
- The user logs out of RM, in which case the lock will be lifted.
- The administrator clears the lock, for details see ["Managing Requirement Locks" on page 530](#).

About Workflows

For each requirement class, the administrator can define a workflow. A workflow ensures the proper flow of requirements using a defined process that consists of attributes, states and transitions. Requirements must follow the rules established by this workflow from the time they are submitted.

For any requirement opened in the **Edit Attributes** dialog, the Workflow State badge (**In Analysis** in the example below) is displayed next to the requirement title. The Workflow State badge is also included in reports.

STATE HISTORY

Project: [E2017] Edition 2017

Category: RMDemo/Project/Edition 2017

STANDARD ATTRIBUTES

Reqmt ID: PROD_000029.E2017 Title: Facial recognition Workflow State: In Analysis

Text

ePhoto shall be capable of facial recognition

Update to FaceSDK 6.2 version for recognition

CUSTOM ATTRIBUTES

Figure 3-2. Workflow state of a requirement

Workflow Elements

A workflow consists of two elements: states and transitions.

State History: A state is a position in a workflow to which the object is assigned. While in a given state, it is assigned the owner responsible for performing a specific task (e.g., review, analysis, etc.) before it can be transitioned to the next state. All previous states of a requirement are displayed in the **State History** section.



Figure 3-3. State History is included in the History section of an Open Object.

Transition: A transition activates the movement of a requirement from one workflow state to another. For example, the transition 'To Analysis' will cause the requirement to be moved from the 'Proposed' state to 'In Analysis'. When using Workflow, the Available Transitions are listed at the top of an open object.

Details: Selecting **Details...** (at the bottom of each transition entry in the **State History**), opens a report listing attribute changes applied during the workflow transition.

The **History Differences** dialog can be opened by clicking  located in the title bar of the Transition Details dialog (see [Figure 3-4](#))



Figure 3-4. Transition Details Dialog

Transitioning Requirements to a different Workflow State

Transitions move objects from one state to another (e.g., from *Draft* to *Review*). Each transition may be defined as regular or quick.

The regular transition requires the owner to manually review the requirement prior to selecting the next workflow state whereupon a dialog (workflow form) is raised containing attributes that may be or that **must** be populated prior to the successful completion of the transition.

A **Quick Transition** is one that is automatically executed once all mandatory criteria have been met. For example, if a transition from Proposed to Review requires that a Title, Description and the Analyst attributes must be populated, the requirement will be transitioned automatically as soon as the three attributes are populated.

For additional information concerning workflow elements, transition forms and settings see ["Creating and Editing Workflows" on page 589](#).

Transitioning Requirements with Electronic Signatures

An electronic signature may be required to ensure that the person recorded as responsible for the change is, in fact, the person making the change.

When transitioning a requirement for which the electronic signature has been enabled, the user must confirm his identity by typing their password. The successfully signed and transitioned requirement will be displayed in the transition details as well as in the **State History** section:

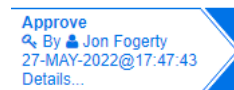


Figure 3-5. Electronic Signature shows in State History

Transitioning a Single Requirement to a different Workflow State

Note about Quick Transitions:

A quick transition is one that is defined to be executed automatically, once all mandatory criteria have been met. For example, if a transition from Proposed to Review requires that an Analyst and Project Lead be assigned, the requirement will transition if those attributes have been populated.

- 1 A Manual Requirement Transition can be initiated using one of the following:

Select a requirement from any requirement list, including document content, and choose **Execute Transition** from the Requirements set of the Actions pane.

Select a transition from the **Available Transitions** listed at the top of an object opened in the **Edit Requirements** dialog.

Selecting the Transition drop-down (top right) from the **Edit Requirements** dialog.

- 2 If multiple workflow states are possible from the current State, select the desired transition from those available. For details see ["About Workflows" on page 108](#).

3 Next Steps

If all required attributes have been populated, the object will transition.
Proceed to **#6 The Transition Result**.

If **electronic signature** is required: See [Transitioning Requirements with Electronic Signatures](#)

4 Populate mandatory requirements.

Mandatory attributes in the target workflow are marked in red, with the segments on the form containing mandatory attributes highlighted. The requirement will not be transitioned unless these attributes are populated.
Optional attributes may also be populated in this dialog.

5 Click OK

- 6 The **Transition Result** dialog is raised.

This dialog displays both the number of transitioned items as well as the number that failed. To view the IDs of the transitioned requirements, expand the result list by clicking .

Transitioning Multiple Requirements to a different Workflow State

The benefit of transitioning multiple requirements with a single action is that many attributes, mandatory or optional, concerning release targets or assignment are the same and can be entered in a single dialog.

Please note that a warning is raised on bulk transitions indicating that mandatory attributes, those displayed with a red label, may already have a value. You can provide new values for these fields as needed

To transition requirements using Execute Transition

- 1 Select the requirement(s) to be transitioned.

Objects can be selected from any requirement list, including a document, collection or using Quick Search. see chapter ["Quick Search Filtering" on page 185](#).
- 2 Click **Execute Transition** in the Requirements set of the Actions pane.
- 3 If multiple transitions are possible, select the desired transition from the **Transition** box.
- 4 Populate and/or modify all mandatory attributes.

The modifications to mandatory and optional requirements will be applied to all requirements included in the transition.
- 5 Click **OK** to execute the transition.
- 6 The **Transition Result** dialog is raised.

This dialog displays both the number of transitioned items as well as the number that failed. To view the IDs of the transitioned requirements, expand the result list by clicking .

Copying the URL of a Requirement to the Clipboard

You can copy the URL of a requirement and paste it into a file for future use and reference. When that URL is later invoked, it will open RM Browser to that requirement.

You can copy a URL that will always lead to the most current version of the requirement, or you can copy a URL to a specific version of the requirement. See the appropriate section below.

Copying the URL of the Latest Version of a Requirement

- 1 Open the requirement for editing. See ["Editing a Requirement" on page 122](#).
- 2 Expand the **System Attributes** section of the Edit Attributes dialog.
- 3 Right-click on the URL labeled as the **Requirement Link**.
- 4 Select **Copy Shortcut** (or a similar menu item, depending upon the browser you are using).

The URL is now on the Windows clipboard. You can now paste it into the file in which you wish to keep it.

Copying the URL of a Specific Version of a Requirement

- 1 Open the requirement for editing. See ["Editing a Requirement" on page 122](#).
- 2 Expand the **History** section of the Edit Attributes dialog.

» LINKS			
» HISTORY			
Pedigree		Properties Differences 	
	Time Modified	Modified By	Current Status
	18-MAY-2006@08:59:35	Ryan Forbes	Replaced (Baselined)
 	30-SEP-2015@01:41:48	Ryan Forbes	Replaced
 	28-JUL-2020@06:15:11	Joseph Wilson	Current
» POLLS			

- 3 Right-click the link  icon next to the version that you want.
- 4 Select **Copy Shortcut** (or a similar menu item, depending upon the browser you are using).

The URL is now on the Windows clipboard. You can now paste it into the file in which you wish to keep it.

Working with the Hierarchy View

The Hierarchy is accessible from the category tree of the Home View.

The hierarchy addresses the needs of those who prefer to build a structure of requirements, making relationships visible within that structure. A product requirement, for example, might elicit multiple linked sub requirements; using the **+New Child** the new requirement can be created and linked in a single function.

In the Category Structure, only objects defined as categories are displayed. Highlighting a category causes its contents to be displayed in the Home View Requirements Tab. New objects are added to selected categories using the **New** menu or the **New** Action.

In the **Hierarchy Structure**, the contents are included in the structure and listed when one all categories are expanded. The content of a selected requirement is displayed in the Requirements tab.

Category related commands are available when working in either the Hierarchy or Category Structure. For example, users may select containers from any Home View tab (e.g., documents, reports, or collections) and, using drag-and-drop, move the object from one category into another.

Documents created from the hierarchy inherit that structure.

- To switch to the Hierarchy in Home View, click .
- If the Hierarchy is or becomes your principle working view you may set the **Default View** in User Settings, see ["Home Settings" on page 73](#).

The Hierarchy can be defined and managed as follows.

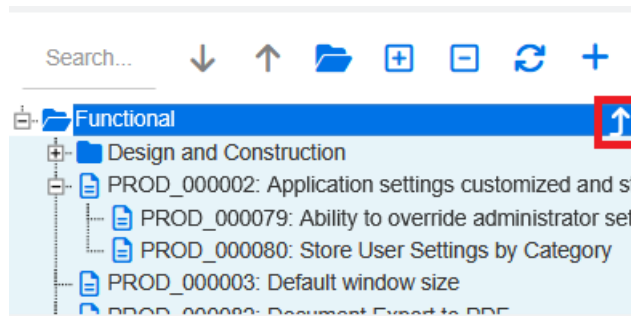


Figure 3-6. The Hierarchy View, expands to list Category Folders and Content

 **Move Upwards:** Move up a category level in the Hierarchy.

This icon is displayed to the right of the top entry in the **visible** hierarchy, when there are additional categories available above.

 **Search:** Search in the hierarchy for objects matching the string.

Enter the search string and hit return or click the search button to locate matching objects; matches are shown in bold. When matching a parent, be it category, header or requirement, the child objects will be included in the response.

To return to the full hierarchy, click the X in the search field.

 **Move down:** Move a requirement object down in the Hierarchy.

Highlight a requirement and click this button to move an object down in the list. Requirements with children will move as a group.

 **Move up:** Move a requirement object up in the Hierarchy.

Highlight a requirement and click this button to move an object down in the list. Requirements with children will move as a group.

<Hierarchy Parent> a Special Attribute, maintains the location of an object in the hierarchy relative to its parent. When an object is moved, a new version is created, please see ["Viewing Requirement History" on page 176](#). The <Hierarchy Parent>, like all attributes, can be included in listings, reports and documents.

 **Include sub categories:** When open, this toggle indicates that subcategories below the selected category will be included. When closed only the selected category will be considered.

This means that, if the Functional category (see [Figure 3-6](#)) is selected and this folder is closed, choosing the **Documents** tab in the Home View will list only Documents contained in the Functional category.

 **Expand all sub categories:** This button expands all categories included in the structure display.

 **Collapse all sub categories:** This button collapses categories in the hierarchy display.

 **Refresh:** Reloads the list of requirements in Hierarchy View.

The following icons create new requirement objects in the designated hierarchy location . For assistance with object creation see ["Creating a New Requirement" on page 117](#).

 **New:** With an object or location selected, offers access to the following functions.

New Child: Opens the new requirement dialog, see [Creating a New Requirement](#). The New Requirement dialog footer provides the following additional options:

- Check to **Add as subrequirement**. If not checked, the new requirement is added directly below the selected object.
- Check to **Add link to <selected object>**, if the relationship exists.



New Above: Opens the new requirement dialog, see [Creating a New Requirement](#). If no additional options are selected, the new object will be created directly **above** the selected object.

If the user chooses to check the Add as subrequirement checkbox, the requirement will be added **below** the selected object, and may be linked to it.

New Below: Opens the new requirement dialog, see [Creating a New Requirement](#). If no additional options are selected, the new object will be created directly **below** the selected object

- Check to **Add as subrequirement**. If not checked, the new requirement is added directly below the selected object.
- Check to **Add link to <selected object>**, if the relationship exists.



New Category: Opens a dialog for creating a new category. This function is only available for administrators.

To export requirements from the Hierarchy View, see chapter ["Exporting Requirements" on page 141](#).

To change the displayed or exported columns, see chapter ["Hierarchy Settings" on page 82](#).

To add one or several requirements to one or several documents, see chapter ["Adding Requirements to a Document" on page 264](#).



NOTE

- The Hierarchy structure, category folders and content, is the same for all users, the attributes displayed may be modified by users, see ["Hierarchy Settings" on page 82](#).
- Dropping a requirement onto another requirement **does not** link the two requirements.

Creating and Managing Requirements

Strictly speaking, we should not limit the discussion to requirements, as many object types are stored using RM. The object may be a change request, a test case, a comment or — a requirement.

When creating, editing, or viewing any object, it is displayed using a form. This may be a default form, or one created by the Instance Administrator.

Displayed at the top of the form are the names of the sections defined within it.

[ALL](#) STANDARD CUSTOM SYSTEM ATTACHMENTS (3) COMMENTS (9) LINKS (2) HISTORY (5) POLLS (1) CONTAINERS (2)

Clicking on a section name (e.g., Custom) limits the display to the attributes managed within that section, while choosing **All** makes all sections available. Sections containing lists of items display the number of items contained: **Attachments**, **Comments**, **Links**, **History**, **Polls**, and **Containers**.

Contained in this Chapter are the following Sections:

- ["Attribute Types" on page 115](#)
- ["Creating a New Requirement" on page 117](#)
- ["Proposing a New Requirement" on page 121](#)
- ["Editing a Requirement" on page 122](#)
- ["HTML Text Formatting Toolbar" on page 126](#)
- ["Copying Requirements" on page 131](#)
- ["Using the Expand Feature" on page 133](#)
- ["Deleting a Requirement" on page 134](#)
- ["Removing a Requirement Version" on page 135](#)

Attribute Types

Dimensions RM allows users to enter data which are represented by different attribute types. The following table lists these attribute types and the controls through which they are accessed or modified.

Attribute Type	Description
Category	Contains the location in which the object is stored. In an open requirement, the category is contained in the Main or Details section, and will be accessible by selecting All . To save an object in a different location, choose the location from the Category drop-down and Save the change.
Alphanumeric	A simple text attribute, for example a requirement title. An alphanumeric attribute does not support HTML text formatting.
Text	A block of text up to 65,000 characters. A simple text attribute may be structured and maintain line breaks. An HTML enabled Text attribute has available a full suite of HTML formatting tools. For further information see "HTML Text Formatting Toolbar" on page 126 .
Calculated	A calculated attribute is a read-only numeric attribute based on input from other numeric attributes. For example, Estimated Effort may be defined to hold the total of the estimated development and test effort.
Date	When selecting a date attribute, a calendar control opens. Depending on the configuration, the date attribute may accept both date and time.
List	List attributes contain a list of values from which the user may select one or multiple values using check box, radio button, or selection through an assignment box. Depending on the length and the controls selected when defined, the list may be visible, or accessible using the  button to open the Find & Select List Value dialog. For further info, see chapter "Find and Select List Values" on page 41 .
Tag List	Tag Lists allow users to add entries to a list attribute. Added values will then be available for selection by other users. Typing into the list box shows entries matching the typed text. To specify a new value, simply enter a text that does not exist in the list of suggested entries.
Group	A list attribute that is composed of a series of sub-list attributes. The items available for selection in each list depends on those selected from the list on the left. For example, given a list of products, configured using one or more platforms that rely on one or more from a set of components. Choosing Product A as the first entry in the Group will establish the entries available in the second list to the possible platforms included in Product A. See "Working with Group Attributes" on page 170 .

Attribute Type	Description
Lookup	Planned for Release: Release 1.0 Q A lookup attribute provides a special relationship with an object in another class in order to access its values. In this sample use case, a Functional Requirement is assigned to a Release by relating it to an object in the Release Class. To open the related requirement, click . To search for (or look up) a release to which the requirement should be assigned, click .
Numeric	Accepts only numeric values, and is typically clear from the name e.g., Test Effort.
File Attachment	The file attachment attribute can hold a single file or multiple files. File attachments are added, viewed, replaced, or deleted by clicking links. To add a file attachment, click . To delete a file attachment, click . To replace a file attachment, click . To view a file attachment, click the file name. By default, file attachment attributes reside in the Attachments section of a requirement. Depending on system configuration, not all file types can be uploaded. For details, see "Upload File Restrictions" on page 94.

Attribute Type	Description
URL	Depending on its configuration, the URL attribute can hold a single URL, or multiple URLs. For each URL, you can specify the actual URL and the display text. Your administrator may configure URL attributes to be validated (e.g. the URL must point to a specific server). To add a new URL, click  . To change an existing URL, click  . To remove an existing URL, click  .
User	User/Group Mode The User attribute is configured to display a list of user names available for assignment. Note that the user list seldom includes all instance users. These lists are used for assignment, or for reference and are generally limited to members of a certain group. Examples: A user attribute named Analyst may be limited to members of the Business Analyst group. This list may be further limited to members of the Analyst group assigned to a specific category. Team Mode The User attribute shows a list of teams. For more information about teams, see chapter "Managing Teams" on page 515. Selecting your own User Account If the current user is a member of a list and should be assigned, click on Me. Find a User: The standard search icon is located next to the user attribute. If the list is long, click the  button to open the Find & Select User dialog. For further details, see chapter "Find and Select List Values" on page 41.

Creating a New Requirement

In some installations, users do not have permission to create a new requirement, the process instead requires that a new requirement be proposed, see ["Proposing a New Requirement" on page 121](#) for related instructions.

The dialog used to create a new requirement can be reached by one of the following:

- Selecting **New** from the Requirements group on the **Actions** pane.
- Selecting  from the Hierarchy view.

Additional options will be available in the dialog footer to either create the new object as a subrequirement, and/or link the new requirement to the selected object. For details see ["Working with the Hierarchy View" on page 111](#).

- Selecting **Create New & Link** from the **Actions pane** or the **Links** section of the Edit Attributes dialog.

The Create New & link dialog:

Base Class - Contains the Class of the selected object.

Create New: Choose a Class from the list of linkable classes.

The selected object is linked when the new object is saved.

The New Requirement Dialog:

- 1 **Class:** Select the class to which the new requirement will belong.

The available list includes all of the classes for which you have "create" or "submit" permission.

If the New dialog was invoked using **Create New & Link** the Class may not be changed in this dialog.

- 2 **Title:** Include a Title if the local process includes the attribute.

- 3 **Description:** Include the object text. This may be a requirement statement, test case description or the information necessary to describe the object.

Applying HTML Formatting: If a text attribute has been defined to accept HTML formatting, as is typical with the description, a tool bar appears when you click into the text box. For details see ["HTML Text Formatting Toolbar" on page 126](#).

- 4 **Category:** Select the category to which the new requirement will belong.

- 5 **Attributes:** Populate the remaining attributes in the web form sections, as needed.

Mandatory attributes that are incomplete or incorrect are flagged with a red exclamation mark (❗). A green check mark (✅) indicates that the value is acceptable. To view a tip as to what values are acceptable, hover over the attribute's exclamation mark or check mark.

Group Attributes: If the form includes Group Attributes, the requirement class has been defined to include one or more group attributes. See ["Working with Group Attributes" on page 170](#).

File Attachments: To attach a file to the requirement, expand this section and click **Attach**. The Add Attachment dialog opens. Enter the full path to the file or click **Browse** to locate the file, and then click the **OK** button.

Containers: To add the new requirement to a collection, expand this section and click one of the following buttons:

 **Create New Collection & Add** to create a new Collection and add the new requirement to it. The *New Collection* dialog opens. See ["Creating a New Collection" on page 369](#), but ignore the **Based on** section as that does not apply to this invocation of the dialog.

 **Add to Collection** to add the new requirement to an existing collection. The *Add to Collection* dialog opens. Select the desired collection or collections and click **OK**.

Add as subrequirement:

If the **New** dialog was invoked while working within an open document or from the Hierarchy, check this box to add the new requirement as a subrequirement of a selected requirement.

Close after save:

Check this box to close the requirement after saving it.

Uncheck the box to allow user to open the object for editing or linking after it is saved.

Save Buttons:

Save: to create the new requirement. The requirement opens for editing if the **Close after save** checkbox is not selected, see ["Editing a Requirement" on page 122](#).

Save & Copy: to create the new requirement, immediately open a new requirement of the same class populated with selected the attribute values. For **Create New & Link**, the new requirement will also be linked to the base.

Attributes are copied into the new requirement only if the Instance Administrator has selected the **Populate On Copy** option when defining the attribute. See ["Attribute Properties" on page 535](#).

Save & New: to create the new requirement and clear the attribute values for creating another new requirement. For **Create New & Link**, the new requirement will also be linked to the base.

Mass Creating Requirements

In addition to the Mass Create & Link functionality described in this section, there are also capabilities using AI-Powered functions to generate Test Cases and Use Cases, as well as to generate requirement titles and to verify requirement quality. For details, please see ["AI-Powered Generation and Review" on page 192](#).

Dimensions RM provides functions for creating multiple requirements linked, upon creation, to a set of base requirements. An example of this functionality is the creation of Test Runs from Test Cases, a function of the RM Testing process. However, there are other use cases that can be addressed using this functionality.

Sample Use Cases:

1 From Multiple Objects in a New Class

We have twenty new business or customer requirements and need to elicit at least one functional requirement for each. We can select each one individually and use **Create New & Link** to create and link to create a functional requirement to each upstream requirement, or we can select all twenty and use Mass **Create New & Link** to create a requirement to each object reusing its title and description. Starting from this base, we can review and modifying the set.

2 From a Collection

Requirements from similar sets of requirements, each in need of a linked subrequirement.



NOTE Mandatory Values

A warning is raised on initial creation indicating that values for mandatory attributes, those displayed with a red label, must be entered and will be used in the requirement creation. These values can be replaced as part of the review process.

To mass create requirements, do the following:

- 1 Select multiple objects from any requirement list, including lists from reports, collections, baselines, or documents.
- 2 From the **Requirements** set of the **Actions** pane, click **Create New & Link**.
- 3 The **Mass Create New & Link** dialog is raised. The **Base Class** is populated, choose the class to be used in creation (**Create New**) from the list of classes linked to the Base Class.
- 4 Click **Next >**.
- 5 Specify an optional prefix in the **Prefix for Title** box.

The prefix will be used with the title attribute of the new requirements and allows users to locate the new requirements more easily.

The creation process will copy attributes defined with the property '**Populate on Create and Link**' enabled and with identical names in each class.

You may choose to populate other attributes or change the category for all.

Created Functional_Requirement from Business_Requirement



Req ID	Title	Req ID	Title
BR_0123	ALM shall provide measurement and analysis report functionality	FR_0307	Enhancement 34763 ALM shall provide measurement and analysis report functionality
BR_0124	ALM shall provide 8 D report support	FR_0308	Enhancement 34763 ALM shall provide 8 D report support
BR_0125	ALM shall provide an export functionality	FR_0309	Enhancement 34763 ALM shall provide an export functionality

Close

Figure 3-7. The Created Dialog identifies the three business requirements selected and the functional requirements created and linked.

- 6 Click **Save**.

This starts the creation and linking of the requirements. When the process is complete, the **Created** dialog opens.

The create dialog, shown in [Figure 3-7](#), contains a table with the original requirement and the created requirement. By clicking the ID of a created

requirement, each can be opened for editing (see ["Editing a Requirement" on page 122](#)).

As each is opened and modified, use the Save button to save the changes for each.

Note that it is also possible to **Close** the *Created Dialog* and to locate and modify the new requirements from a list.

7 Click **Close**.

Proposing a New Requirement

If you have permission to submit change requests (CreateCR), you can propose a new requirement. This is true even if you do not have permission to create new requirements. In doing so, you can specify the desired attributes for the new requirement.

To propose a new requirement:

1 Do one of the following:

- Select **Propose New** from the **Requirements** set of the Actions pane. The *Propose New Requirement* dialog opens. Then, select the class to which the new requirement will belong from the **Class** box. This list includes all of the classes for which you have **create** or **submit** permission.



If a requirement was selected or open when the dialog was invoked, the dialog opens with a class already selected.

- From the **New** menu, in the menu bar, select the class for which you want to create the change request. This opens the dialog for creating a new requirement. Then, select **Propose New** from the **Actions** drop-down list.

2 **Category:** Select the category to which the new requirement will belong.

3 **Attributes:** Complete the fields in the attributes sections, as needed. Attributes that are incomplete or incorrect are flagged with a red exclamation mark (❗). A green check mark (✅) indicates that the value is acceptable. To view a tip as to what values are acceptable, hover over the attribute's exclamation mark or check mark.



Group Attributes: If this section appears, the requirement class has been defined to include one or more group attributes. See ["Working with Group Attributes" on page 170](#).

HTML Formatting: If a text attribute was defined to allow HTML formatting, a text formatting tool bar appears when you click into the attribute's field. See ["Find and Select List Values" on page 41](#).

4 **File Attachments:** To attach a file to the requirement, expand this section and click **Attach**. The Add Attachment dialog opens. Enter the full path to the file or click **Browse** to locate the file, and then click the **OK** button.

5 **Reason for change:** Enter the reason you want to create a new requirement.

- 6 **ECP:** If you want to link the new requirement to an ECP class object, select the desired ECP from the list. If no ECPs have been defined, the list does not appear.



NOTE

ECPs are a high-level change management class type (Engineering Change Proposal) that can be used to collect multiple change requests into a single package.

- 7 **Add change request to the document:** If you invoked the dialog from a Document work page, you have the option of adding the change request to that document.
- 8 **Close after save:** Select this check-box to close the change request after saving it. Otherwise, the requirement opens for editing after you save it.
- 9 Click one of the following buttons:
- Submit** to submit the change request and close the dialog.
- Submit & Next** to submit the change request and keep the dialog open for submitting another change request.



NOTE

When creating a new proposal, links and collections are inherited from the original requirement. For further information, see chapters ["Inherited Links" on page 161](#) and ["Container Properties" on page 166](#).

Editing a Requirement

Each object managed in RM, whether a requirement, test case, glossary or information object can be selected and opened using the **Open** action from the **Actions** Pane. Whether used for editing or viewing, the open requirement form is referred to as "The Edit Requirements Dialog".

Authorized users may modify attributes within the open dialog and **Save** their changes to create a new version of the object. Change details referencing user and date information are automatically captured, along with the changes introduced.

The **Close** button is available to exit the dialog after changes have been saved, or to close the dialog without saving changes.

The Sections below discuss the following:

[The Forms Structure](#): The segments of the Open Requirements Dialog.

[Populating or Modifying Attributes](#): A brief listing of the types of attributes available.

The Forms Structure

The structure of the forms used for the **Edit Requirements Dialog** are based on the Class types and the attributes defined within each class. All forms are segmented, using either default titles or titles created by the Instance Administrator. The segment names are listed across the top of the open form for selection and expansion.

Objects of any class (requirements, test cases, use cases, etc.) are opened by selecting the object from a list and clicking the Open action. When opened, each requirement will open with the segments expended as they were when an object of the same class was last opened.

Dimensions RM is configurable, the segments listed are defaults, your Instance Administrator may have chosen to modify default segment names and content.

All - This tab, when selected, makes **all** segments available for expansion.

Available Transitions

If the class of the open object has Workflow assigned, the available transition(s) will be listed below the segment tabs. To view the defined workflow states and transitions, expand the Actions menu (top right of the open form) and select **Class Information**; the full workflow will be displayed.

Segment Selection

Click the tab to select and expand a single segment.

To expand a segment within the form, click **>** next to the segment name.

Typical Segments Include:

Standard or Main - Displays Requirement ID, Title, Current Workflow State, Description, Category.

Custom or Details - Properties determined by the organization to be relevant to the class, e.g., priority, target release, estimated effort, design status, or reviewer.

System Attributes - Implicit attributes defined and maintained within RM, for example, who created or modified a requirement and when they did it.

Attachments - Allows users to attach files to an object.

Comments - Segment supporting the inclusion of discussion threads.

Links - Segment expands to list or browse existing links, or to add or create new ones.

History - The Workflow State and version history of the object.

Containers - A list of documents, collections, snapshots or baselines containing the object.

Segments with Content Counts - The remaining segments list Attachments, Comments, Links, History and Containers; these segments display number of entries when populated.

Populating or Modifying Attributes

When creating or transitioning a requirement you will encounter attributes marked as **mandatory** (the object cannot be saved unless populated).

Mandatory Attributes that have not been populated or populated incorrectly are flagged with a red exclamation mark () on both the containing segment and the attribute.

A green check mark () indicates that the attribute has been populated correctly.

Hover over the attribute title and you may find expected or acceptable values displayed concerning the attribute values.

The following Attribute types are supported:

For a complete list of attribute types and the details associated with their definition you may refer to ["Attribute Definition" on page 533](#).

Category: The category attribute displays the location in which the object is stored. It is contained, by default, in the **Main** or **Details** Section or accessible by selecting **All**. Use the Category menu to save the object in a different location. The category change will be tracked in the objects history.

Date: When selecting the date attribute, a calendar control opens. Depending on your Dimensions RM configuration, this calendar control may also allow to set the time.

List: If the attribute is a selection from a predefined list, you will be presented with a drop-down list to select from. Note that the cell will still show a deleted list value, but the drop-down list will not.

Numeric: Allows you to enter a numeric value.

Text: If the attribute is a text value, a cursor will appear in the cell so you can edit the text as needed. If the attribute can accept text formatting, the Formatting Tool Bar appears in the cell. For text attributes, these sub-types exist:

Simple Text Attributes (Alphanumeric): A simple text attribute does not allow text formatting and does not allow line breaks.

Multi-line Text Attributes (non-html enabled Text): A multi-line text attribute (non-HTML enabled) does not allow text formatting, but allows the contained text to be on multiple lines. To start a new line, press **Enter**.

HTML Text Attributes: An HTML text attribute allows text formatting and line breaks. For text formatting, use the **Formatting Tool Bar** as described above.

User: When selecting the user attribute, a list of users and/or groups opens. Note that the cell will still show a deleted user, but the drop-down list will not.

List Attributes: If an entry in a list appears to be grayed out, this entry has been deleted and cannot be selected - although it can still be used in a search.

Group Attributes: If this section appears, the requirement class has been defined to include one or more group attributes. See ["Working with Group Attributes" on page 170](#).

User Attributes: If a user attribute shows a user name with a link, you can open a popup window with the user information (e.g. full name, e-mail address, phone

number) by clicking that link. Note that only those data will be available which have been entered upon user creation. If the user attribute shows a group name, the popup lists users of the group.

Applying HTML Formatting: If a text attribute can accept HTML formatting, a text formatting tool bar appears when you click in the attribute's field. See ["Find and Select List Values" on page 41](#).

File Attachments: To attach a file to, or remove a file from, the requirement, expand this section. See ["Working with File Attachments" on page 169](#).

Comments: To view comments associated with the requirement or participate in or start a discussion, expand this section. See ["Managing Comments in Requirements" on page 138](#).

Containers: To add/remove the requirement to/from a collection or document, expand the Container section. See chapter ["The Containers Section" on page 165](#).

Links: The links section can be expanded to list classes related to the requirement, to list existing links, or to add or remove links. Suspect links may also be displayed. See ["Working with Links" on page 145](#).

Link Attributes: The **Link Attributes** section is only visible if attributes have been defined and associated with links as part of the process, see ["Editing Link Attributes" on page 158](#).

Dimensions CM: If the implementation has been integrated with Dimensions CM, this section displays Dimensions CM projects and requests associated with the requirement.

History: This section displays information such as the date and time the requirement was modified, who modified it, and its status.

Polls: To create a poll associated with the requirement, modify an existing poll, vote in a poll, or view poll results, expand this section. See ["NLP Complexity Analysis" on page 208](#).

Various Options From the Edit Requirements Dialog

Show navigation bar / Hide navigation bar: Click to show/hide the navigation bar at the bottom of the dialog. You can browse through the requirements in sequence with the **First**, **Previous**, **Next**, and **Last** controls.

Close after save: Select this check-box to close the requirement after saving it. Otherwise, the requirement opens for editing after you save it. **Close after save** is not available if the navigation bar is visible.

Clickable Buttons shown at the bottom of the modified requirement will depend on process, and permissions. The following may be available.

Copy - Create a new object of the same class pre-populated with attributes designated as [Populate on Copy](#), see ["Copying Requirements" on page 131](#).

Copy with Links - As above, but includes with the copy all current links.

Close - Close the dialog. If there are unsaved changes a warning is raised.

Update - Changes are saved without creating a new version of the requirement. (This option is not recommended if you need to maintain a history, or audit trail, of changes to requirements over time.)

Update & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.

Save - Changes are saved as a new version of the requirement. If no changes were made, the requirement cannot be saved; changes to links are immediate.

Depending on your configuration, replacing a requirement may trigger the **Clear Suspect for** dialog (see ["Clearing Suspect Links When Replacing a Requirement" on page 160](#)).

Save & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.

HTML Text Formatting Toolbar

If a Text attribute is defined to be HTML enabled, a toolbar appears when you click in the attribute's text box.

The following describes the Toolbar Icons. For additional information concerning the creation of tables see [Table Properties](#).

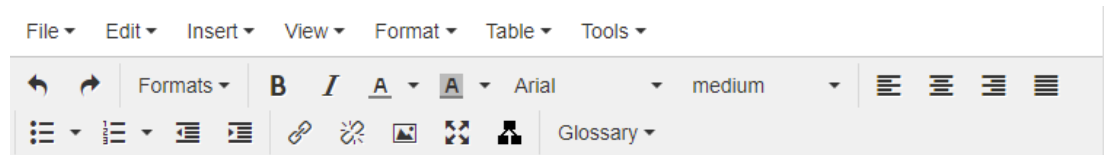


Figure 3-8. HTML Text Formatting toolbar from an Open Requirement

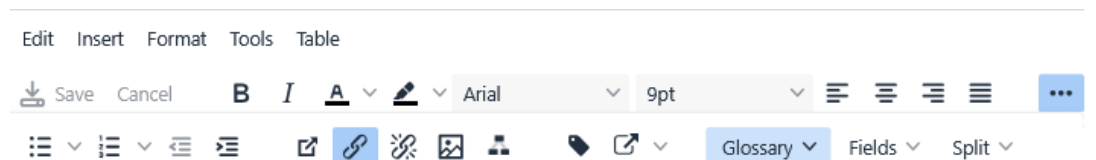


Figure 3-9. HTML Text Formatting toolbar from an Open Document

The following controls are included in multiple rows:

Undo and Redo

Save: Saves modifications. **Save** is only available in Entire Document View.

Cancel: Discards modifications. **Cancel** is only available in Entire Document View.

Standard Toolbar Formatting:

Apply bold and italic formatting.

Select text color and background color.

Align the text.

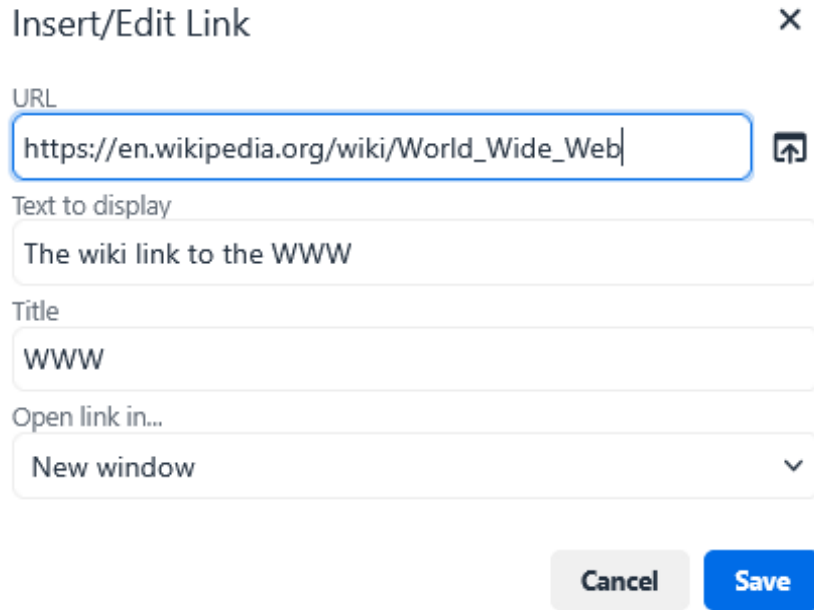
Open link: Click to open a selected link. Note that this button is only available in entire document view.

  Apply list formatting.

  Apply indentation formatting.

... Click the ellipsis to Reveal or Hide additional toolbar items.

 **Insert/edit link:** To create a link or edit an existing link, select the text and click the **Insert/edit link** button. The **Insert link** dialog appears. Complete the fields as needed, choose to open link in **Current Window** or **New Window**, and click Save.

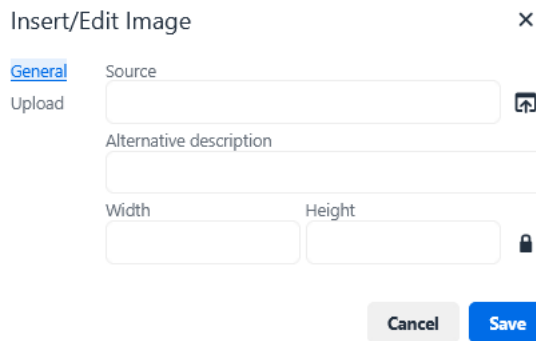


The dialog box is titled "Insert/Edit Link" with a close button (X) in the top right corner. It contains the following fields and controls:

- URL:** A text input field containing "https://en.wikipedia.org/wiki/World_Wide_Web". To the right of the field is a small icon of a document with an upward arrow.
- Text to display:** A text input field containing "The wiki link to the WWW".
- Title:** A text input field containing "WWW".
- Open link in...:** A dropdown menu with "New window" selected and a downward arrow icon.
- Buttons:** "Cancel" and "Save" buttons at the bottom right.

 **Remove link:** To remove an existing link, select the link and click the **Remove link** button.

 **Insert/edit image:** To insert a graphic into the attribute, place the cursor where you want to insert the image. To edit the HTML parameters of an existing image, select the image element. Then click the **Insert/edit image** button. The **Insert/edit image** dialog opens. Complete the fields as needed and click **Save**.



The dialog box is titled "Insert/Edit Image" with a close button (X) in the top right corner. It contains the following fields and controls:

- General:** A tab labeled "General" in blue.
- Upload:** A text input field for the source URL. To the right of the field is a small icon of a document with an upward arrow.
- Alternative description:** A text input field.
- Width:** A text input field.
- Height:** A text input field. To the right of the field is a small lock icon.
- Buttons:** "Cancel" and "Save" buttons at the bottom right.

 **Toggle full screen mode:** Click to toggle between a dialog view and a full screen view of the text attribute you are editing.

 **Open graph editor:** Opens the graph editor. For further information about the graph editor, see ["Graph Editor" on page 181](#).

 **Add caption:** To add or rename a caption, select an image or a table and click the **Add caption** button. This opens the **Add Caption** dialog. Complete the fields as needed and click **OK**.

Enabling the Use auto numbering for captions will automatically create the number for all captions in the document. The number will be updated automatically whenever the document is loaded.

 **Cross Reference:** Clicking the triangle next to the button opens the Add Cross Reference Dialog. For detail, see ["Collaborative Document Editing" on page 254](#).

Glossary Dialog: Glossary entries are added from or inserted into any HTML enabled attributes using the menu entries. For detail, see ["Collaborative Document Editing" on page 254](#).

Fields: The Fields menu provides users with the ability to include Placeholders that, like variables, will be replaced with their actual values during the export process. For further information, see ["Using Placeholders in Documents" on page 274](#).

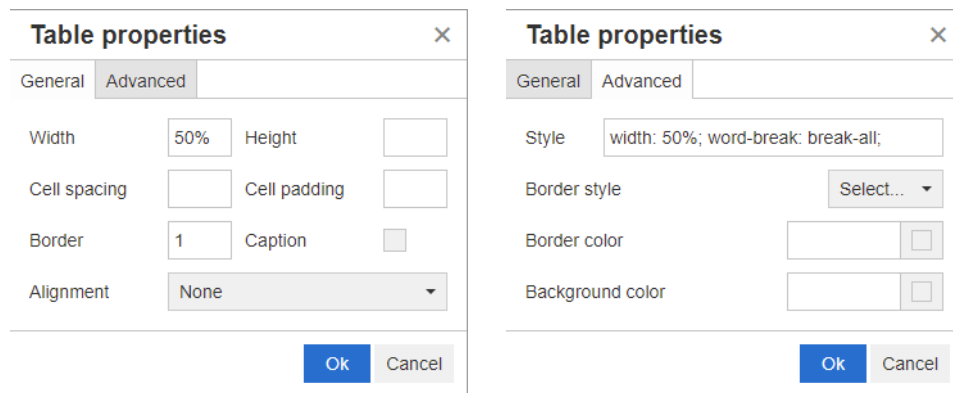
Split: Users can Split the text from a requirement that should be two, or select text from a chapter to be used as the basis for a new requirement. See section ["Splitting Text Into Requirements" on page 272](#).

Table Properties

Table Properties includes sections describing [Row Properties](#), [Cell Properties](#) and a short section on the insertion of page breaks for long tables. [Inserting Requirement Page Breaks](#).

To open the table properties, execute these steps:

- 1 Select the table.
- 2 Click  in the popup toolbar. This opens the **Table Properties** dialog.



The image displays two side-by-side screenshots of the 'Table properties' dialog box. The left dialog is on the 'General' tab, showing fields for Width (50%), Height, Cell spacing, Cell padding, Border (1), Caption, and Alignment (None). The right dialog is on the 'Advanced' tab, showing fields for Style (width: 50%; word-break: break-all;), Border style (Select...), Border color, and Background color. Both dialogs have 'Ok' and 'Cancel' buttons at the bottom.

Width: Specifies the width of the table. The width can be specified in % (e.g. 50%) or pixels (e.g. 75).

Height: Specifies the height of the table. The height can be specified in % (e.g. 50%) or pixels (e.g. 75).

Cell spacing: Defines the distance in pixels between two cells or the cell and the table border.

Cell padding: Defines the distance in pixels between the cell content and the cell border.

Border: Defines the width in pixels of the table border. A value of 0 means no border.

Caption: Creates an extra row on top of the table in which you can enter a table caption (heading) for the table. Note that this is not related to the **Add Caption** function.

Alignment: Allows you to select how the table should be aligned.

None: Uses the default alignment, usually left.

Left: Aligns the table to the left border of the window.

Center: Horizontally centers the table.

Right: Aligns the table to the right border of the window.

Style: This attribute allows to define CSS styles. Usually you do not need to edit this value.

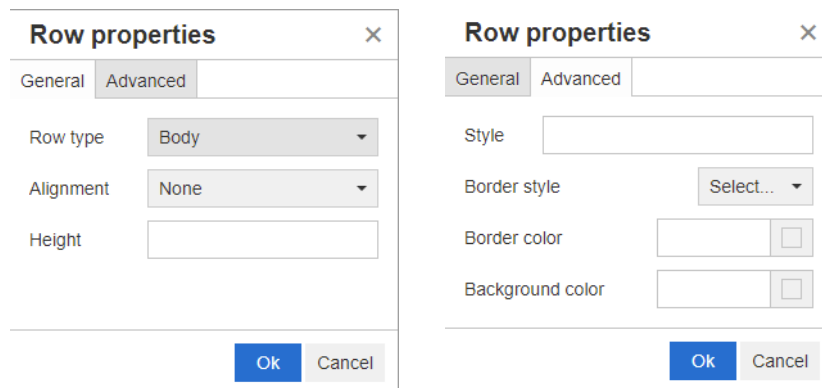
Border color: Defines the color of the table border. The value can be any HTML known color (e.g. red, green, blue) or color value (#FF0000, #00FF00, #0000FF). Clicking the grey box opens the **Color** dialog which allows easy selection of the desired color. Note: Not all browsers may support this feature.

Background color: Defines the color of all table cells. The value can be any HTML known color (e.g. red, green, blue) or color value (#FF0000, #00FF00, #0000FF). Clicking the grey box opens the **Color** dialog which allows easy selection of the desired color.

Row Properties

To open the row properties, execute these steps:

- 1 Select a row in the table.
- 2 In the **Table** menu, point to **Row**, then select **Row properties**. This opens the **Row Properties** dialog.



Row type: Defines the type of a table row. This setting can be ignored.

Header: The row is a header row (in HTML this is a row within a THEAD tag). Selecting the **Header** type repeats the header on each new page in exported Word documents.

Body: The row is a regular body row. This is the default.

Footer: The row is a footer row (in HTML this is a row within a TFOOT tag).

Alignment: Aligns the content of all cells in the row.

None: Uses the default alignment, usually left.

Left: Aligns all content to the left.

Center: Centers all content.

Right: Aligns all content to the right.

Height: Specifies the height of the row. The height can be specified in % (e.g. 50%) or pixels (e.g. 75).

Style: This attribute allows to define CSS styles. Usually you do not need to edit this value.

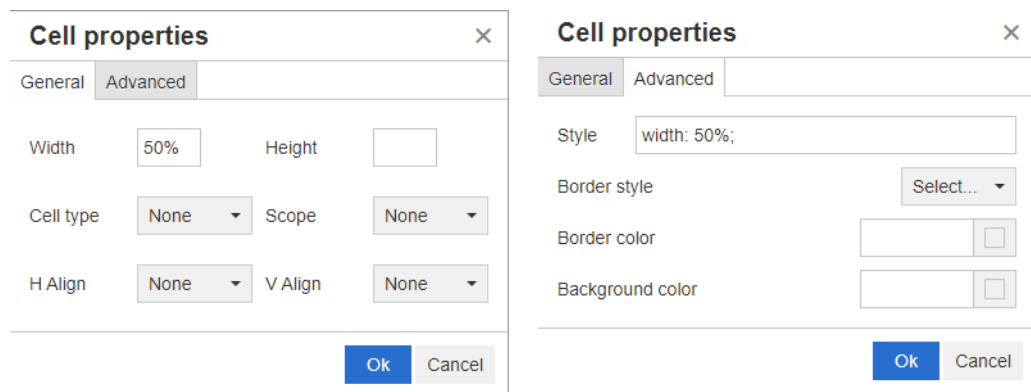
Border color: Defines the color of the border of all cells in the selected row. The value can be any HTML known color (e.g. red, green, blue) or color value (#FF0000, #00FF00, #0000FF). Clicking the grey box opens the **Color** dialog which allows easy selection of the desired color. Note: Not all browsers may support this feature.

Background color: Defines the color of all cells in the selected row. The value can be any HTML known color (e.g. red, green, blue) or color value (#FF0000, #00FF00, #0000FF). Clicking the grey box opens the **Color** dialog which allows easy selection of the desired color.

Cell Properties

To open the cell properties, execute these steps:

- 1 Select one or several cells in the table.
- 2 In the **Table** menu, point to **Cell**, then select **Cell properties**. This opens the **Row Properties** dialog.



Width: Specifies the width of the selected cells. The width can be specified in % (e.g. 50%) or pixels (e.g. 75).

Height: Specifies the height of the selected cells. The height can be specified in % (e.g. 50%) or pixels (e.g. 75).

Cell type: Specifies the type of the selected cells.

Cell: This is a regular cell.

Header cell: This is a header cell, which may apply additional formatting.

Scope: Specifies the scope of the selected cells. Usually you do not need to change this setting.

None: There is no scope for this cell. This is the default.

Row: The cell is a header for a row.

Column: The cell is a header for a column.

Row group: The cell is a header for a group of rows.

Column group: The cell is a header for a group of columns.

H Align: Horizontally aligns the content of the selected cells.

None: Uses the default alignment, usually left.

Left: Aligns all content to the left.

Center: Centers all content.

Right: Aligns all content to the right.

V Align: Vertically aligns the content of the selected cells.

None: Uses the default alignment, usually middle.

Top: Aligns all content to the top of the cell.

Middle: Vertically centers the content within the cell.

Bottom: Aligns all content to the bottom of the cell.

Style: This attribute allows to define CSS styles. Usually you do not need to edit this value.

Border color: Defines the color of the border of the selected cells. The value can be any HTML known color (e.g. red, green, blue) or color value (#FF0000, #00FF00, #0000FF). Not all browsers may support this feature. Clicking the grey box opens the **Color** dialog which allows easy selection of the desired color.

Background color: Defines the color of the selected cell. The value can be any HTML known color (e.g. red, green, blue) or color value (#FF0000, #00FF00, #0000FF). Clicking the grey box opens the **Color** dialog which allows easy selection of the desired color.

Inserting Requirement Page Breaks

When exporting a document, you may have page breaks within a chapter (or requirement), e.g. before a long table.

To insert a page break, select the **Insert** menu, then select  **Page break**.

A page break is visualized by .

Copying Requirements

It is sometimes the case that a new project may be based on the set of requirements similar to those contained in an existing project. Or when adding requirements for a new component the simplest approach might be to copy a set of existing requirements and to make the changes necessary to distinguish, for example, the right motor brace from the left, without missing anything.

The **Copy** action is used to make copies of one or one-hundred requirements.



NOTE The Copy Action in an Open Document

Objects can be selected and copied from within an open document using the '**Copy**' Action.

The behavior is as described in this section, the copied requirements are inserted into the document next to the source of the copy.

To copy one or more requirements:

Select one or more objects from any list, from Quick Search, the Home requirements tab, or requirements from a document or collection, and choose **Copy** from the Requirements set in the Actions pane.

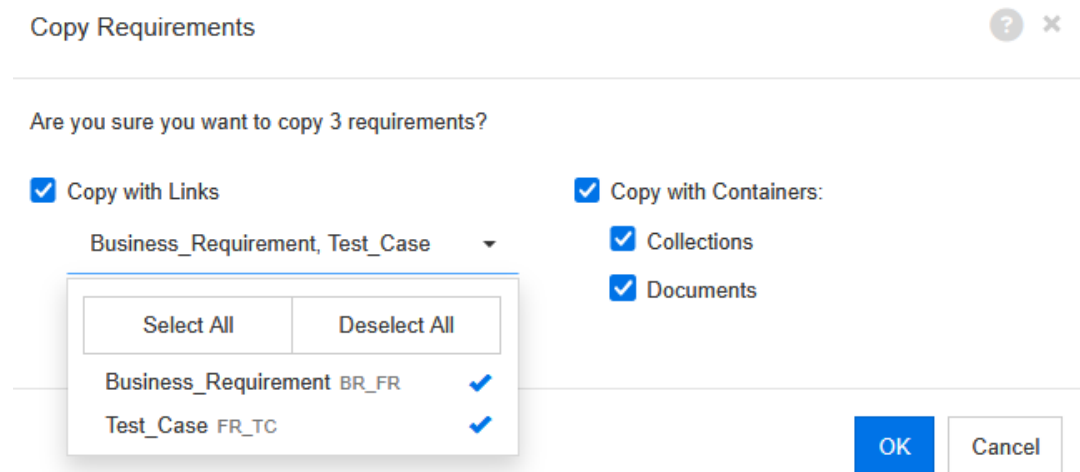


Figure 3-10. Making Copies of 3 Requirements, with links and containers maintained.

When selecting multiple objects the Copy Requirements dialog will display the number of requirements selected. If the number posted is correct, simply proceed to the options, otherwise, click the cancel to exit and review your selection.

Attributes Populated on Copy:

Copying 1 Requirement: Attributes are automatically copied into the new requirement only if the Instance Administrator has selected the **Populate On Copy** option when defining the attribute. See ["Attribute Properties" on page 535](#).

Copying Multiple Requirements: (Mass Copy) Attributes are copied into the new requirement only if the Instance Administrator has selected the **Populate On Mass Copy** option when defining the attribute. See ["Attribute Properties" on page 535](#).

The following options are available with the Copy action.

Copy with Links: When checked, all links from the source will be included in newly created object(s). A feature that might prove useful when, for example, copying functional requirements and their related test cases.

- Copy Links may be limited to selected relationships.
The possible relationships are shown, with a drop-down to select relationships.

Link new Requirements with Original - Create a link between the newly created object(s) and the objects from which they were created.

Copy Results		
Source ID	Title	New ID
FR_0011	Rework in current release.	FR_0306
FR_0013	Rework measurements	FR_0307
FR_0018	Multiple Projects in SBM	FR_0308

Figure 3-11. Links will be created between each New ID and the Source

Copy with Containers - a checkbox to include each newly created object in the Collections and Documents in which the source is a member. To exclude from either Collections or Documents clear this checkbox and select individually.

Collections - Clear the checkbox to exclude each newly created object from the collections in which the source is a member.

Documents - Clear the checkbox to exclude each newly created object from the documents in which the source is a member

Using the Expand Feature

Expand allows a requirement to be "branched" such that the original requirement is locked, while one or more new requirements are created and linked to the original. The history, including the locked parent, is displayed in the **Pedigree View** (see chapter ["Using Pedigree View" on page 179](#)).

Expanding a requirements sets the object status of the original requirement to **Expanded**. The new requirement has the object status of **Current**.

To expand a requirement:

- 1 In **Requirements View**, select one or several requirements with object status **Current** or **Expanded**.
- 2 Click **Expand** in the **Requirements** set of the **Actions** pane.
This opens the **New Class Name** dialog.
- 3 Make modifications as desired.
- 4 Click **Save**.

Deleting a Requirement

When objects are deleted, a new version is created with the Object Status set to Deleted, as opposed to Current; this maintains the audit trail.

—To delete one or more requirements:

- 1 Select one or several requirements from any list.
- 2 Select **Delete** from the **Requirements** set of the **Actions** pane.
- 3 Click **OK** to confirm the operation.

A deleted object may be Undeleted (see [Undeleting a Requirement](#)).

—A Note about Deleting requirements from the Hierarchy:

The Hierarchy maintains associations between objects through context and relationship.



Figure 3-12. *PROD_000031 is the Hierarchy Parent of 000032, 000033, 000034*

The deletion of requirements from the hierarchy must respect the structure. PROD_000031 cannot be deleted, unless its children are selected to be deleted with it. An attempt to delete PROD_000031, alone, will raise a message that all children must be deleted, or the delete will fail.

Undeleting a Requirement

Use the **Undelete** action from the Requirement set on the Action pane.

When an object is deleted, the object status is set to deleted, all other data as well as the objects history is retained. Undeleting the requirement, creates a new version changing the object status from Deleted to Current. The previous version is maintained to ensure the audit trail includes the Delete action.

To undelete a requirement from Quick Search:

- 1 Choose the Class containing the deleted object. If unsure you may choose all classes.
- 2 To limit the display to only Deleted requirements:
 - a Under System Attributes, choose Object Status Is Deleted

Object Status	▼	Is	▼	Deleted	▼

- b Click the search  to refresh the list displayed.
- 3 Select one or several requirements from the list of deleted objects.
 - 4 Select **Undelete** from the **Requirements** set of the **Actions** pane.

- 5 Click **OK** to confirm the operation.
- 6 Change the Object Status back to Current to continue working with these requirements.

Removing a Requirement Version

Use the **Remove** action from the Requirement set on the Action pane.

When a requirement version is removed, it is permanently removed from the database; the object status of the previous version is made Current. The Remove action should be used only when a requirement or a requirement version has been created in error.

The Remove dialog includes an option to **Include all versions**. Checking this box means that all versions, the requirement and its history will be removed.



CAUTION! A remove operation cannot be undone. Its use is only recommended if requirements were created in error.

Versions contained in a Baseline or Snapshot MAY NOT be removed.

To remove a requirement:

- 1 Select one or several requirements from the list displayed.
- 2 Select **Remove** from the **Requirements** set of the **Actions** pane.
- 3 **Include all versions:** If this option is selected, all versions of the requirement will be removed, assuming none have been included in a baseline or snapshot.
- 4 Click **OK** to confirm the operation.

Changing the Class of a Requirement



NOTE Additional options for splitting requirement or chapter text

It is also possible to create requirements from imported chapter text, or to split requirement or chapter text into requirements. For details, see ["Splitting Text Into Requirements" on page 272](#).

At times it may be necessary to change the class of a requirement. This may be done because the object was created in the wrong class or because a major class has been broken in several (e.g., a general Customer Request class into Customer Specific classes).

Using the Change Class function changes the class of a requirement while recording the change in the requirement's history, which may be important for audit trails.

When Changing the Class:

The corresponding Title and Text attributes (the names depend on the related classes) are transferred automatically.

Depending on the Dimensions RM configuration, and the relationships defined for the old and new class, the linked requirements may become suspect.

To change the class of a requirement:

1 Select one or several requirements

Selection may be made from any requirements list.

2 Click Change Class in the **Requirements** set of the **Actions** pane.

3 From the **New Class** box, select the class you want to convert the requirement to.

If you selected several requirements, all requirements will be converted into the selected class.

4 Click **Next**.

5 Populate attributes and/or change the category as desired or required.

6 Click **Save**.

Save opens the **Changed** dialog which presents an overview of the changed requirements.

Click the left ID link (the name depends on the original class) of a requirement to open the original version.

Click the New ID to open the new requirement for additional editing.

If the Workflow feature is enabled for the target class, the requirement will be assigned to the initial workflow state.

7 Click **Close**.

Submitting a Change Request

The Change Request within Dimensions RM refers to the *proposal* to apply a change to a selected requirement. This section refers to those organizations that use the Actions:

Propose Change to Propose a change to an existing requirement. Propose change has, historically, been referred to as submitting a change request.

Propose New to propose a new requirement, see ["Proposing a New Requirement" on page 121](#).

In many organizations, users are not allowed to change a requirement, but only to propose a change while review and acceptance of the proposed change is left to the team leads.

Change proposals are also used when the requirement gathering process is nearly completed and a stricter review process is in place.

To submit a change request for a requirement:

1 After selecting the desired requirement in a work pane, select **Propose Change** from the **Requirements** set of the Actions pane.

2 Change the attributes in the attributes sections as desired. Changes are marked by .

3 In the **Reason for change** box, type the justification for the change request.

There is no practical limit to the number of characters. The HTML editing control is not available in the **Reason for change** field.

- 4 If you want to link the change request to an Engineering Change Proposal (ECP) class object, select the object in the **ECP** list.

The **ECP** list box does not appear if no ECPs have been defined.

- 5 **Exchange in:**

If the request was submitted from a document, you can select this checkbox to replace the version in the document with the new version.

- 6 **Close after save:**

Select this check-box to close the change request after saving it. Otherwise, the change request opens for editing after you save it. **Close after save** is not available if the navigation bar is visible.

- 7 Do one of the following:

Click Submit to submit the change request. The change request opens for editing if the **Close after save** checkbox is not selected.

Click Submit & Next to submit the change request and then load the next requirement in the query results.



NOTE Inherited Links

When submitting a change request, links and containers are inherited. For further information see chapters ["Inherited Links" on page 161](#) and ["Container Properties" on page 166](#).

Reviewing a Change Request

Change Requests (Proposals) are created when a process is used to propose changes (Actions **Propose New** or **Propose Change**), rather than introducing a requirement change through the Edit Requirements dialog.

- 1 Change Proposals are reviewed using the **Accept/Reject Proposals** Dialog, this dialog can be accessed using one of the following methods:
 - Highlighting a listed requirement and clicking **Accept/Reject** from the **Requirements** set of the **Actions** pane.
 - Clicking the content of the special attribute <Proposals>, from a listed requirement.
- 2 From either of the above, the **Accept/Reject Proposals** dialog is opened.
- 3 A list of pending change proposals is displayed in the left pane. Highlight a change request, the differences between the proposed changes and the current version are displayed in the text.
- 4 Enter a reason for accepting or rejecting the change; this attribute may be mandatory.
- 5 Click **Accept** to accept the change request or **Reject** to reject it.

- When a change request is accepted, the modified requirement replaces the current version of the requirement.
- The proposed change, whether rejected or accepted remains in the requirement history.

6 To accept a previously rejected change request, do the following:

- a Click the **Show previously rejected requests** link at the top left of the dialog box.
- b Select the rejected change request.
- c If you have permission to approve the rejected change request, the **Accept** button is enabled. Click the **Accept** button.
- d Click **Close**.

Managing Comments in Requirements

This section discusses:

[Adding a Comment from an Open Requirement](#)

[Adding a Comment from the Actions Pane](#)

[Replying to a Comment](#)

[Comment States](#)

[Comment Functions](#)

About Comments and the Comment Process:

Comments allow users to initiate discussions during requirement review. Once a comment is created, requirement authors may clarify a requirement statement or raise questions using Reply. In a standard display list or from within a document, comments can be included in the display and reviewed at any time during a project review and approval process.

Comments can be used simply to ask questions about the text or the assignment of a requirement, or the team may create a standard review and acceptance process, of which requirements become a part. For example, assigned reviewers may not have the permissions necessary to modify requirements, however, they may raise comments that can be reviewed, incorporated and accepted.

When using comments as part of a standard process, it is most efficient to review the comments as part of that process. Users may modify the display to include the <Comments> special attribute, and then limit the display to include only those requirements with comments, thus ensuring all objects with comments are reviewed.

Comments raised in documents, or those associated with requirements contained in a document can be reviewed using the Document Comments Dialog. The Actions available to manage requirements from within an open document can be found in Section ["Using Comments in Documents" on page 278](#). The Comments associated from all requirements contained in a document, as well as Comments associated with Document text can be viewed from the **Document Comments Dialog**.

Adding a Comment from an Open Requirement

To add a Comment from the Edit Requirements Dialog, use the plus sign from the expanded **Comments** Section provides these functions:

-  **Add Comment:** Opens a comment box in the open **Edit Attributes** dialog.
To confirm your comment, click **Save**.
To discard your comment, click **Close**.
- Filtering:** By clicking **New**, **Active**, **Done**, **Accepted** or **Rejected** buttons comments can be filtered by state. The number on each state button shows the number of comments with that state.
-  Click the User Head to limit the list to comments create by the current user.
-  **Refresh:** Reloads the comment list.

Adding a Comment from the Actions Pane

To add a comment to a requirement from the Actions pane, do the following:

- 1 Select a requirement (e.g. on Home View, Quick Search or Document View).
- 2 Select the **Add Comment** Action. This opens the object and expands the **Comment** dialog.
- 3 Enter your comment.
- 4 Click one of the following:
 - Save:** Adds the comment to the selected requirement and keeps the dialog open.
 - Close:** Adds the comment to the selected requirement and closes the dialog.

Replying to a Comment

For instances in which notifications have been activated, users will be notified when a colleague responds to a comment they have initiated. If notification is via Browser, an alert will be raised in **Browser Notification Alerts** on the **Main Menu Bar**, otherwise an e-mail is sent.

To reply to a comment from associated with a requirement:

- 1 Open the requirement.
- 2 Expand the **Comments** section.
- 3 Click  or click **Reply** for a specific comment.
Enter the text of your reply into the Comment box. The comment reply, once saved, will be linked to the parent and will appear, indented, below the parent in the comment section.
- 4 Click one of the following:
 - Save:** Adds the comment to the selected requirement and keeps the dialog open.
 - Close:** Closes the dialog without saving the comment.

Comment States

A comment can have one of these states:



New: The current user has not read this comment.



Read: This comment has been read by the current user, but no further action has been taken.



Done: This comment has been incorporated.



Accepted: This comment has been accepted.



Rejected: This comment has been rejected.

Comment Functions

A comment provides the following functions:



Incorporate: Depending on process, this means that the requirement is ready to be incorporated into the requirement or text.



Accept: This function is only available if the Instance Administrator has configured the instance to enable the Accept function (see **Comments**, in the ["Requirements Settings" on page 74](#)).

Before a Comment can be Accepted, it must be incorporated. It is expected that the user who created the Comment will review and Accept the change.

If a user other than the author of the comment chooses to mark the incorporated comment as Accepted a message is raised in the Accept dialog: *This is a step which should be done by the author of the comment. Please confirm that you are confident that the author is ok with accepting this comment.*



Reject: Rejects the comment.



Delete: Deletes the comment. You can only delete a comment if it matches the following conditions:

- You are the author of the comment.
- No user has replied.



Reply: Adds a new comment as a reply. The text box to enter the comment is created within the comment.

To confirm your reply, click **Save**.

To discard your reply, click **Close**.

- For instances in which user notifications have been activated users will be notified when a colleague responds to a comment.



Show Replies: Shows the replies within the comment.



Hide replies: Hides the replies for the comment.



Select User: When typing the @ sign in a comment, a list is shown from which you can select users. If your administrator configured the notification service, users included in a comment will be notified.

Exporting Requirements

Everything managed within RM can be Exported. The options may differ depending on your current view, but the functions remain the same.

Documents and Dashboards offer unique formats and options, for details refer to the following.

Documents and **Snapshots** see ["Exporting Documents" on page 287](#).

Dashboards see ["Exporting a Dashboard" on page 307](#)).

- 1 To initiate an export for one of the following:
 - a **Quick Search:** The displayed list can be exported, or a subset highlighted.
Click **Export** from the **Category** set of the Actions pane.
 - b **Home View Requirements Tab:**
The displayed list can be exported, or a subset highlighted, or use the Check box to select a subset.
Click **Export** from the **Category** set of the Actions pane.
 - c **Hierarchy:** In the Home View Hierarchy, select a category or subcategory.
Click **Export** from the **Hierarchy** set of the Actions pane.
 - d **Collection:** Select a Collection from the Collection tab on Home View.
Click **Export** from the **Collection** set of the Actions pane.
 - e **Baseline:** Select a Baseline from the Baseline tab on Home View.
Click **Export** from the **Baseline** set of the Actions pane.
- 2 Based on the **Export as** format, proceed as follows:
 - Excel Spreadsheet:** ["Export as a Microsoft Excel Spreadsheet" on page 141](#)
 - Word Document:** ["Export as a Microsoft Word Document" on page 142](#).
 - PDF Document:** ["Export as an Adobe PDF Document" on page 143](#).
 - XML Document:** ["Export as an XML Document" on page 143](#).
 - Web Page:** ["Export as a Web Page" on page 144](#).
 - CSV (Comma Delimited):** ["Export as a CSV File" on page 144](#).
 - Plain Text or Plain Text (Table):** ["Export as a Plain Text or Plain Text Table File" on page 145](#).

Export as a Microsoft Excel Spreadsheet

To export any requirement set after selecting **Excel Spreadsheet** (*.xlsx).

- 1 The dialog includes the following options:
 - a **Include html text formatting:**

Check this box to include html enabled formatting in the output. Images and Tables may only be included in the output if html formatting is included.

Off by default, this setting provides users the ability to export HTML enabled text as plain text in requirements exported from any requirement list.

- b Include images:** If selected, images are exported into the Excel file.

Images may only be included if Include html text formatting is included.

Many Images cannot be exported into an excel cell, if you cannot paste a selected image into a cell, RM will also be unable to export the image. We recommend that objects containing images be exported as part of a document using Microsoft Word.

- c Include Tables:**

Tables may only be included if Include html text formatting is included.

If selected, the requirement could span more than a single row in excel causing confusion in the output. If not selected the word 'Table' appears in the Excel cell.

- d Include the script:** If selected, the script used to query the requirements is included in the Excel spreadsheet.

- e Repeat Source Values:** If selected, cells that would otherwise be left blank will be populated with repeated values.

- 2** To Export only selected objects click: **Export Selected Requirements**

- 3** To Export the full list, click **Export**

Export as a Microsoft Word Document

Word on the Server:

Microsoft Word is required on the Dimensions RM Server to generate DOCX or PDF files. If Word is not installed on the server, a .doc file is created.

When opening a .doc file, you might receive a message that informs you that this file is in a different format than .doc; you can safely click **Yes** in this dialog box and the file will open in Word.

If a .doc file is created, all links in the Table of Contents point to page number one. To correctly number the entries in the Table of Contents, right-click the Table of Contents and select **Update** in the context menu.

To export any requirement set after selecting **Word Document (*.docx)**.

- 1** Select Page Orientation:

- a** Portrait (default)

- b** Landscape

- 2** To Export only selected objects click: **Export Selected Requirements**

- 3** To Export the full list, click **Export**

Export as an Adobe PDF Document

Word on the Server:

Microsoft Word is required on the Dimensions RM Server to generate PDF files.

Functionality from the Java Library, considered Beta, is included with Dimensions RM in support of those customers unable to install Microsoft Office on corporate servers. This functionality can be used to export requirements from Document View. See ["Exporting Documents" on page 287](#).

To export any requirement set after selecting **PDF Document**.

- 1 Select Page Orientation:
 - a Portrait (default)
 - b Landscape
- 2 To Export only selected objects click: **Export Selected Requirements**
- 3 To Export the full list, click **Export**

Export as an XML Document

To export a selected requirement or set of requirements after selecting **PDF Document**.

- 1 **Encode:** To Include images and formatting (e.g., text colors, text alignment, Check the box.
- 2 To Export only Selected click: **Export Selected Requirements**
- 3 To Export the list displayed, click Export

Understanding an Exported XML Document

This section includes excerpts from an example XML document that is produced by exporting requirements, and a table that describes the elements in the excerpts.

The following table describes the elements in the preceding excerpts. Note the following terms:

- **Tags** are enclosed by < > brackets.
- **Attributes** are anything of type name=value within a tag.
- **Content** is any plain text between opening and closing tags.

Description
<REPORT> is the root tag in the XML document. It has attributes for the query name, the instance name, and the user who performed the query.
If a PLUS statement is used in a query, additional <SUBREPORT> tags re included in the export.
Each <REPORT> or <SUBREPORT> tag contains a <LAYOUT> tag that describes the mapping from the Dimensions RM attribute names and the display names to be used in a report.

Description
The <SCHEMA> tag contains the classes used in the query and more details about the attributes involved. NOTE: The <LAYOUT> tag may define the same attribute more than once, but the <SCHEMA> tag displays the attribute only once.
The <CLASS> tag is created for each requirement that is returned from the query. The content of the tag is the class name and the class ID.
Each <ATTRIBUTE> tag has attributes for name, ID, and type; and mandatory, editable, unique, and visible flags. For each RM attribute of type "puid," "alphanumeric," or "date," a <FORMAT> tag is created. The attribute type determines the attributes of the <FORMAT> tag. For each Dimensions RM attribute of type "list," a <LISTVALUES> tag is created that lists the valid values for the attribute.
For each Dimensions RM requirement returned from the query, a tag is created that matches the Dimensions RM class name (for example, <requirement class>) and that contains the requirement ID. Each requirement tag then contains the attributes requested in the query.
For each Dimensions RM attribute requested in the query for a particular requirement, a tag is created that matches the Dimensions RM attribute name (for example, <TEXT>). The content of the tag is the value of the Dimensions RM attribute.
The XREF statement in a query allows you to show the linkage or traceability between requirements. If an XREF report is run, the relationships are shown as nested <LINK> tags. The "name" attribute is the name of a Dimensions RM relationship. The <LINK> tag contains tags for the related requirements. There may be more than one <LINK> tag at the same level to indicate multiple links to the same requirement. The same requirement may appear more than once in the XML output because of different relationships to the same requirement.
The last tag in the report is the <SCRIPT> tag. The content of the tag is the query string used for the query. Because it may contain incompatible XML text, it is wrapped in a [!CDATA] block to preserve all text.

Export as a Web Page

There are no additional choices.

To Export only Selected click: **Export Selected Requirements**

To Export the list displayed, click **Export**

Export as a CSV File



NOTE Exporting for Import

If the intention when exporting to CSV is to re-import the exported file, you must include the PUID (Requirement ID) or the Object ID to support mapping.

To Export only Selected click: **Export Selected Requirements**

To Export the list displayed, click Export

There are special considerations when exporting *Test Case* or *Test Run* requirements (as defined for ["Test Management" on page 409](#)) to CSV format:

- 1 The Test Step columns will be split into these individual columns:
 - Test Steps - Description
 - Test Steps - Expected Result
 - Test Steps - Actual Result (only for *Test Run* requirements)
- 2 The Test Step number will not be exported.

Export as a Plain Text or Plain Text Table File

To export any requirement set after selecting **Plain Text (*.txt)** or **Plain Text Table**

To Export only Selected click: **Export Selected Requirements**

To Export the list displayed, click **Export**

Working with Links

Links provide traceability, the breakdown and tracking of requirements throughout the development lifecycle.

A single business requirement may generate 10 use cases, 30 functional requirements, and another 40 test cases. The goal of product management is to be able to generate progress reports indicating status until each one of those test cases has been marked with a pass.

No requirement should exist on its own, each must be part of the release trace reporting. In Dimensions RM we accomplish this with links.

There are many ways to link requirements, our intention is make linking easy from any dialog.

In RM Browser, links can be created through the following Actions:

From **Actions**, given a selected object:

Create Link also referred to as quick-link - ["Create Link or Link Existing" on page 147](#)

Create New & Link - ["Creating a new Requirement and Linking to it" on page 154](#)

Create New, Link & Add to Document - ["Creating a new Requirement and Linking to it" on page 154](#)

From **requirement definition** using **Link Existing** or **Create New & Link**

From an **open Document** where all **Actions** are available.

From **Split View** and **Document Split View** Quick Search filtering is available to support drag-and-drop linking, see ["Linking Existing Requirements through Split View" on page 151](#)

From the **Relationship** matrix one click linking is available - ["Creating a Relationship Report" on page 346](#)

Link Browser follows the links from a selected object, as well as providing a facility for building new ones - ["Using Link Browser" on page 162](#)

The Versions Linked

The default behavior is to create a link between current versions of requirements, rather than specific requirement versions. A link joining a business with one or more functional requirements will hold, even if all involved are modified, because the link is transferred to the child. A link will hold until it is deleted, and even then, if the link was included in a baseline, its history will remain for as long as the instance remains.

The Link Section of an Open Object provides access to the following:

	Browse Links: Opens the Link Browser dialog. For details, see chapter "Using Link Browser" on page 162 .
	Suspect History: Opens the Suspect History dialog. For details, see chapter "Using the Suspect History" on page 161 .
	Expand: Expands all link sections. This function is not available once a user has shifted to Quick View.
	Collapse: Collapses all link sections. This function is not available when using Quick View.
	Quick View: Lists all linked requirements in a single table. Because requirements of different classes are listed, only common attributes are available for display. Classes with no active links are not displayed. Double-clicking a requirement in the table opens the requirement.
	Extended View: Lists linked requirement by class, each in its own table; the properties function can be used to expand the display. Double-clicking a requirement in the table opens the requirement.
	Properties: Opens the <i>Link Properties</i> dialog. For details, see "Link Properties" on page 157 .
	Clear all suspicious links: Clears all suspicious links. For details, see chapter "Clearing Suspect Links" on page 160 .
	Link Existing: Opens the <i>Link Requirements</i> dialog to allow users to link the current requirement to an existing requirement. See "Create Link or Link Existing" on page 147 .

	Create New & Link: This function is useful when breaking a single requirement into multiple related requirements, for example, a Business Requirement into multiple Functional requirements. See "Creating a new Requirement and Linking to it" on page 154. Opens a dialog to select the relationship to be created, if there are multiple relationships possible, before opening the New requirement dialog. The newly created requirement will be linked and, if you choose Save & Copy, the next requirement will also be linked to the originally selected requirement.
	Propose New & Link: Opens the <i>Propose New Requirement</i> dialog and links the created proposal. Propose New & Link is only available if the team has chosen to use proposals, rather than relying on the workflow process. For details, see "Submitting a Change Request" on page 136.
	Edit Link Attributes: Opens the <i>Edit Link Attributes</i> dialog that allows you to view and modify custom attributes for a link. For details, see "Editing Link Attributes" on page 158.
	Delete Link: Deletes the selected link. Delete Link is available if the user has the <i>Link</i> right for classes and the <i>Delete</i> right for relationships.
	Remove Link: Permanently removes a link. Remove Link is available if the user has the <i>Link</i> right for classes and the <i>Remove</i> right for relationships. CAUTION! You cannot restore a removed link.
	Undelete Link: Restores a deleted link. Undelete Link is available if the user has the <i>Link</i> right for classes and the <i>Undelete</i> right for relationships. For details on how to undelete a deleted link, see chapter "Link Properties" on page 157.
	Raise Suspicion: Makes a linked requirement suspect. Raise Suspicion is available if the user has the <i>Link</i> right for classes and the <i>Raise Suspect Links</i> right for relationships. For details about suspect links see chapter "Suspect Links" on page 158.
	Resolve Suspicion: Clears suspicion from one or more highlighted linked objects. Resolve Suspicion is available if the user has the <i>Link</i> right for classes and the <i>Clear Suspect Links</i> and <i>Mass Clear Suspect Links</i> rights for relationships. For details about clearing suspect links see chapter "Suspect Links" on page 158.

Create Link or Link Existing

The focus of this section is the creation of a link between two existing requirements. The function can be accessed through:

Create Link accessible from the Requirements set on the Actions pane, or

Link Existing, accessed from the link section of an open requirement.

For either, the Link Dialog is raised

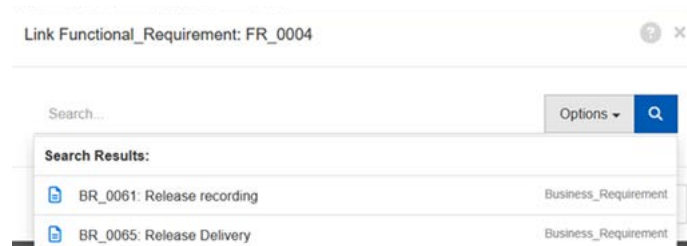


Figure 3-13. Click to choose an object, ctrl+click to select multiples.

Using the Quick Link Dialog:

- 1 Use the Options dialog to filter the selection, selections are preserved for each user.

Limit the optional search string to Rqmt ID (PUID), Title or Description

Class Filter: Limit the search to a specific class(es)

Category Filter: Check the categories to be included

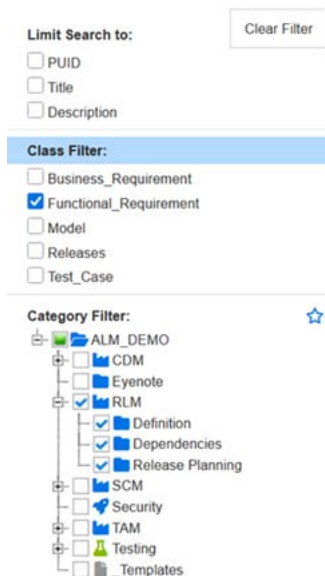


Figure 3-14. Selected Link Options are preserved for the user.

- 2 Include an optional search string to filter linkable objects with matching text.

- 3 **Click the search**  to initiate or refresh the search.

- a Click to select a single object.
- b **ctrl+click** to select multiple objects.
- c Optionally, Click the search  to refresh the display.
- d Click the **x** button to remove objects from the list.
- e Click the **Add** button to create links.

If the link(s) to be added are between two requirements belonging to separate classes the Link Results dialog will be raised.

However, if the relationship is cyclic (e.g., Functional to Functional) you will be asked if the initiating object (the one displayed at the top of the dialog) is to be Primary or Secondary to the object(s) to be linked. For additional details see ["Creating a Cyclic Link" on page 149](#).

- 4 Deleted Links may be displayed and relinked, if the option to display deleted links is selected, see [Link Properties](#).
- 5 Should a more detailed search be necessary (e.g., Attribute or Relationship constraints are needed), select **Advanced Search** (see [Advanced Search](#)) to search through the full range of objects using the **Find Now** dialog.
- 6 Select **Link to Document** (see [Link to Document](#)) to link requirements to chapters in a document.

Creating a Cyclic Link

Cyclic relationships (see ["cyclic relationship" on page 925](#)) are generally created in order to break a single requirement into its related parts. To link two requirements from the same class we need to know which requirement is primary, i.e., which defines the primary function, and which a subrequirement.

How should the relationships to appear in a link browser or traceability report:

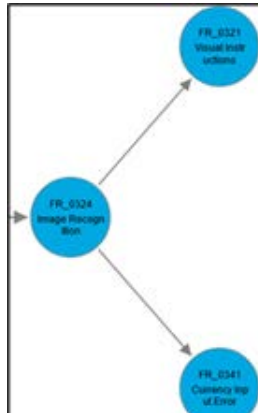


Figure 3-15. *FR_0324 is primary to the secondary (child) requirements.*

Link to Document

Assuming a relationship has been defined between a the class containing objects to be linked and the Chapter Class (see ["Defining the Chapter Class" on page 578](#)), a requirement may be linked to document chapters.

From the **Link to Document** dialog:

- 1 Select the category containing the document, selecting the root category with an open folder will make all documents available.
- 2 Use the filters to help find the correct document.
- 3 Highlight the document and then expand the contents to locate the correct chapter. You may use the search filter to limit the view.
- 4 Once one or more chapters are selected, click OK.
You may also note that objects may be linked to related classes from this dialog as well.
- 5 Click **Add** to create the link. You may also include additional chapter links with by clicking **Link to Document**. Always click on the **Add** to complete the link creation.



Figure 3-16. *BR_0007 will be linked to chapter 1.2 in the document displayed.*

Linking Existing Requirements through Split View

The **Split View** and **Document Split View** selections under the **Views** tab offer a simpler method for linking existing requirements. Split View and Document Split View may be used to directly link requirements from one class to another; they will be linked in the direction of the relationship line in the schema.

In a typical setup, a Primary Requirement is linked to one in a secondary class, Business to Functional for example, where the Functional class, the class on the right side of the split, is the referenced class. When using Quick Search in Split View mode, multi-selection (Ctrl+click) is only allowed for the referenced class.

Using the filtering of Quick Search (see "[Quick Search Filtering](#)" on page 185) the requirements list can be filtered on both sides of the Split View dialog. A link is created by dragging requirements from one side to the other.

The class listed on the right side, the referenced class, provides an extended list of functionality, including clickable icons to link selected requirements.

To use Split View for linking, follow these steps:

See [Document Split View](#) for linking from open documents.

- 1 In the menu bar, under Views, select **Split View**
- 2 The Quick Search window is split into two dialogs.

Select a Class on the left, and a related Class on the right side. Standard Quick Search filters can be applied..

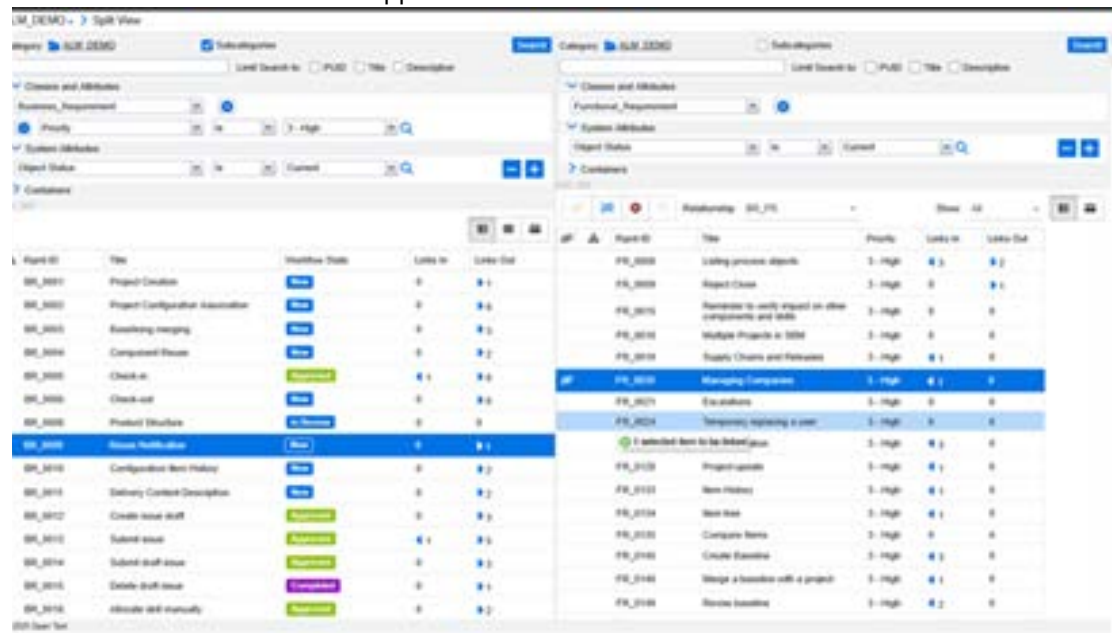
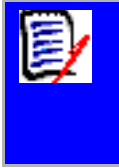


Figure 3-17. To link: Select, Drag and Connect.

The Class Selection may include any Quick Search option, including limiting the requirements to the contents of a container.



NOTE **Ctrl+click** to multi-select

When using Quick Search in Split View mode, multi-selection is only allowed for the class on the right, the referenced class.

The Quick Search dialog on the right provides the full set of Requirement Actions, in addition to the following:

Create Link:



Highlight one or more requirements on the left, and one or more requirements on the right and click the Create Link icon to create links.

It is also possible to drag a requirements from one side to the other to link two requirements.

Delete Link: Deletes an existing link between selected requirements.



Remove Link: Permanently removes the links between one or several requirements selected from the left and requirements to which they are linked on the right.



You cannot restore a removed link.

Undelete Link: Undeletes deleted links a requirement selected from the left and previously linked requirements selected on the right.

To list deleted links see [Show: Filters the listed requirements](#).



Relationship: Shows all relationships between the two selected classes.

Show: Filters the listed requirements.

All: Lists all requirements.

Linked: Select a requirement on the left, and view the linked requirements on the right.

Not Linked: Select a requirement on the left to list requirements which are not linked.

Deleted Links: Shows only requirements with deleted links.

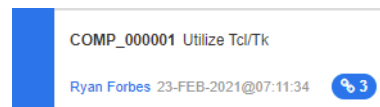


Grid View: Shows requirements in a table. This is the standard view for Quick Search.



Card View: Show requirements as separate cards. Each card shows the following information:

- Requirement ID
- Title
- Owner
- Last modification date
- Number of links



Document Split View

For those more comfortable viewing requirements from document structure, **Document Split View** is available.

The two sides of the split can be populated with the same document to facilitate linking between the document objects or two different documents may be selected to link requirements from, for example, a design document, with their functional breakdown.

From Document Split View requirement objects may be linked to chapters, assuming the Instance Administrator has created a relationship between the Chapter class and the requirement class. See ["Defining the Chapter Class" on page 578](#).

To link a Requirement from a class with a relationship to the Chapter Class:

Select a requirement and drag it across to a related Chapter.

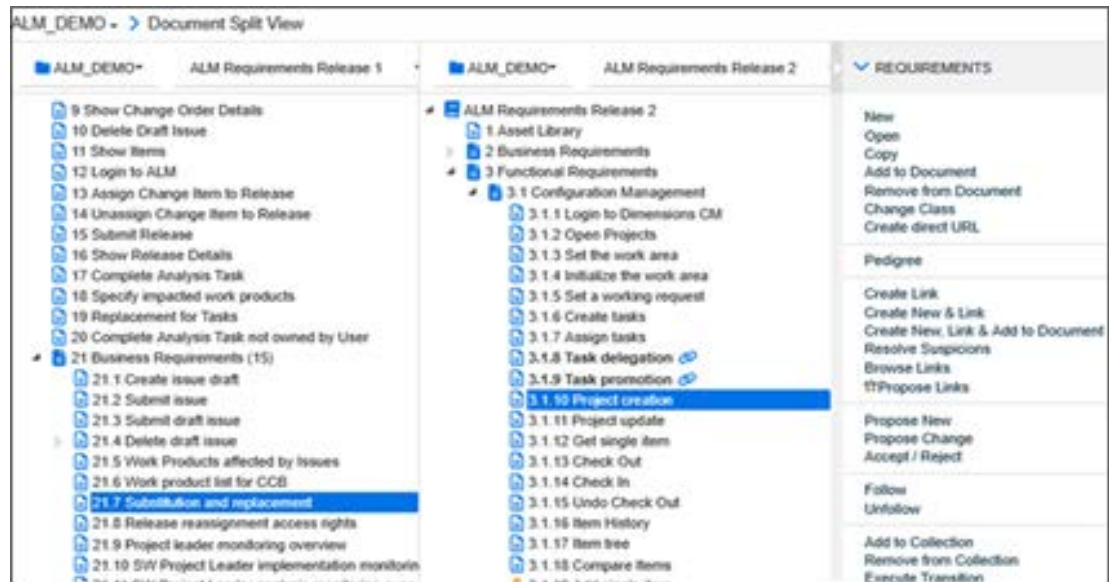


Figure 3-18. Select an object on the left and see the link icons on the right.

In Document Split View, the right Quick Search window provides these additional functions:

Create Link:



Highlight one or more requirements on the left, and one or more requirements on the right and click the Create Link icon to create links.

It is also possible to drag a requirements from one side to the other to link two requirements.



Delete Link: Deletes the links between selected requirements.



Remove Link: Permanently removes the links between selected requirements.

You cannot restore a removed link.



Undelete Link: Restores previously deleted links.



Refresh the dialog on the right.



Expand all Chapters in the document.



Collapse all Chapters in the document.

Creating a new Requirement and Linking to it

- 1 Highlight one or more requirements and select the **Create New & Link** action.

- a Select the class containing the requirement you want to link to.
 - b Select **Next**. The **New** dialog is opened, with indications at the bottom that once saved, the new requirement will be linked to the one selected.
 - c Populate and Save the new requirement.
- 2 Or from within a requirement opened for editing:
- a Expand the Links section.
 - b Expand the class containing the requirement to which you want to link.
 - c Select the requirement.
 - d Click  to open the **Create New & Link** dialog.
 - e Select the class in which you want to create the new requirement.
 - f Select **Next**.
 - g The **New** dialog is opened, with indications at the bottom that once saved, the requirement will be linked to the one selected.
 - h Click on **Save**, or use **Save & Copy** or **Save & New** to create additional requirements also linked to the parent.



NOTE Copying Attribute Values

If configured by the administrator, the identically named attribute values from the source will be copied to the newly created requirement.

Proposing a new Requirement and Linking to it

If your process is using the propose requirement functions, you may use the **Propose New** action to propose a new requirement and use the **Create Link** Action to link it to an existing requirement, or use **Propose New & Link** as described below.

- 1 Select **Open** from the requirements set of the actions pane.
- 2 Expand the **Links** section.
- 3 Expand the class which contains the requirement you want to link to.
- 4 Click . This opens the dialog to add a new requirement.
- 5 Fill out the attributes.
- 6 If your administrator configured link attributes, you may or have to edit or select attribute values for the link between the two requirements in the **Link Attributes** section.
- 7 Click on **Submit**.



NOTE Populate on Copy

If configured by the administrator, the attribute values of the parent requirement might be copied to the newly created requirement.

Deleting or Removing Links



NOTE Baselined Links

When objects and the links between them are included in a single baseline, the links can not be deleted, as such a deletion would alter the baseline content.

In the case of an attempt to delete a baselined link, a warning is raised "linked objects must be replaced. Do you want to proceed?" If the user clicks OK, a new version of the requirement is created and the baselined link is unchanged.

- 1 Highlight an object and select **Open** from the requirements set of the actions pane.
- 2 Expand the **Links** section.
- 3 Expand the class which contains the requirement you want to delete or to remove.
- 4 Select the requirements you want to delete or to remove.
- 5 To delete, click on . To remove, click on .



CAUTION!

- You cannot restore a removed link.
- Deleting a link removes the link attribute values as well. Adding the link again **will not** restore the link attribute values.

- 6 Confirm the popup message.

Restoring a deleted Link

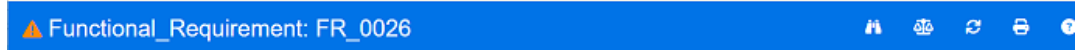
A deleted link is only shown in the list if you turned on the option Show deleted links for the class. For details on how to show deleted links, see chapter "[Link Properties](#)" on page [157](#).

To restore a deleted link:

- 1 Highlight the object and select **Open** from the requirements set of the actions pane.
- 2 Expand the **Links** section.
- 3 Expand the class which contains the requirement you want to restore.
- 4 Select the deleted links you want to restore. Deleted links use an italic font and red text color.
- 5 Click on .
- 6 Confirm the popup message.

Clearing a Suspect Link

The icon indicating suspicion is displayed wherever the Suspect column has been selected, as well as on the header within the Edit Requirements dialog.



There are many ways to clear suspicion, although, based on the process defined, you may simply highlight one or more requirements and select the **Resolve Suspicions** action. Or, from within the Edit Attributes dialog click on the Suspect icon.

For further information about suspect links, see chapter ["Suspect Links" on page 158](#) or ["Clearing Suspect Links" on page 160](#).

Link Properties

In the links section of the **Edit Attributes** the **Properties** dialog can be used to select or modify the attributes displayed for all classes listed using **Quick View**, or for individual classes using the more detailed **Extended View**. The sorting order in both can be modified.

Attributes To Display: To specify the attributes to display, see chapter ["Choosing the Attributes to Display" on page 40](#).

Sorting Order: To specify the sort order, see chapter ["Sorting Order List" on page 40](#).

In addition to the display, the following changes can be made to all classes listed:

Include all requirement versions: List not just the currently linked version, but ALL versions of the linked requirement. When checking this box, the user will be prompted to include Current Status and the Object Version ID, in order to understand the individual versions listed.

Note: This is useful information for checking version history, but we don't recommend leaving this box checked. For products with long histories, the list can be extensive.

Show link creation information: If checked, the list includes the date and time the link was created.

Show deleted links: If checked, deleted links, displayed in italics, will be included on this list and will also be available to other actions such as **Link Existing** for ease of relinking.



NOTE User Default Settings

To modify user defaults for the instance, an **Administrator** can click the button (bottom left) **Set as Instance Settings**. This will make the selected settings the default for those using instance settings.

Editing Link Attributes

Link attributes can be used when additional information relating to link objects is needed. For example, if the team is creating test cases for multiple customers, they may consider one of several possibilities:

They might define a **List Attribute** within each test case class to identify the customer(s) for whom the test is relevant,

or

They might define the List Attribute on the link itself.

Link attributes can be edited:

- When creating a link on an existing requirement (see chapter ["Create Link or Link Existing" on page 147](#));
- When creating a link on a new requirement (see chapter ["Creating a new Requirement and Linking to it" on page 154](#));
- When creating a link on a new change request (see chapter ["Proposing a new Requirement and Linking to it" on page 155](#));

To edit link attributes on an existing link:

- 1 Highlight the object and select **Open** from the requirements set of the actions pane.
- 2 Expand the **Links** section.
- 3 Select a linked requirement.
- 4 Click . This opens the *Edit Link Attributes* dialog.
- 5 Fill out or select the attribute values as required or desired.
- 6 Click **Save**.

Suspect Links

Suspect is a system attribute maintained in every class; it is either True or False. When establishing relationships between classes, the Instance Administrator can choose to raise suspicion (i.e., set the Suspect attribute to True) when certain attributes in linked requirements are changed. The team must review the Suspect requirement to identify the possible impact of the change.

When is suspicion raised:

Not every change in a parent requirement will raise suspicion in the child, nor will every change in the child initiate a review of the parent. Certain attributes may be exempted from raising suspicion, for example, a change in the Notes attribute or the priority may not raise suspicion, while a change in the a title, statement, description or business benefit will. Changes in relationships may also raise suspicion, a deleted link, for example, or a workflow status change.

The system allows the team to raise suspicion when it is sensible to do so, and the suspect links feature allows users to list all suspect objects, to review the source of the suspicion, as well as its impact, and to clear the suspicion in keeping with the established processes.

This section includes:

- [Identifying Suspect Links](#)
- [Suspect Reason Information](#)
- [Clearing Suspect Links](#)

- Specifying a Reason for Resolving a Suspect Link
- Clearing Suspect Links When Replacing a Requirement

Identifying Suspect Links

	The standard suspect link icon indicates that the object is under suspicion and needs review. Click on the suspect icon or open the object to access Suspect Reason dialog.
	Should the setup include the setting <i>Visualize upstream and downstream suspect links</i> , a down arrow will be displayed if the source of the suspicion was initiated by an upstream (parent) object. Click on the icon or open the object to access Suspect Reason dialog.
	Should the setup include the setting <i>Visualize upstream and downstream suspect links</i> , an up arrow will be displayed if the source of the suspicion was initiated by a downstream (child) change. Click on the icon or open the object to access Suspect Reason dialog.

Click the suspect icon from any display list or from an open requirement to view the Suspect Reason dialog listing the details of the change that raised the suspicion.

Suspect Reason Information

This Suspect Reason dialog provides information concerning the attribute(s) modified, the change made, who made the change and when.

FR_0064 - CDR ALM role - CCB						
Suspect Reason				☒ Clear all suspect links		Close
	Class	PUID	Attribute	New Value	Raised At	Raised By
☒	Business_Requirement	BR_0003	Description	The ALM Sytem shall be able to create a baseline from item-revisions selected items or other baselines.	25- APR-2025@13:45:11	John Fogerty
☒	Business_Requirement	BR_0002	Description	The ALM System shall be able to define a project configuration for a-project each instance.	25- APR-2025@11:26:56	John Fogerty

Suspect Reason						
Suspect Reason				☒ Clear all suspect links		Close
	Class	PUID	Attribute	New Value	Raised At	Raised By
☒	Business_Requirement	BR_0056	Title	Release creation will be ecstatic	21- OCT-2025@06:47:12	Joseph Wilson
☒	Business_Requirement	BR_0056	Description	TDR4456 Release should be created at any time during project lifecycle. Also an intermediate (between other two) release is allowed to be created.	17- OCT-2025@13:50:15	Joseph Wilson

Figure 3-19. Suspect Reason raised from any list that includes the suspect icon.

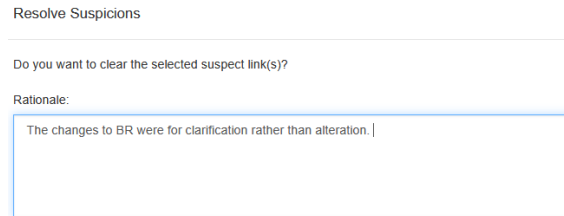
Clearing Suspect Links

To clear suspect links:

- 1 Review the changes that raised suspicion; for additional detail click the PUID/Requirement ID.
- 2 If some, but not all, requirements listed should be cleared of suspicion, uncheck each checkbox those requirements for which suspicion should **not** be cleared at this time.
- 3 Select **Clear all suspect links** (this clears only checked boxes).
- 4 Should the process require a reason, the **Resolve Suspicions** dialog is raised.

Specifying a Reason for Resolving a Suspect Link

The **Resolve Suspicions** dialog is raised when the process requires a reason for clearing the links, or when using the **Resolve Suspicions** action, which does not provide the suspect detail. This is available when clearing suspicion from a group of objects for which the detail is known.



Resolve Suspicions

Do you want to clear the selected suspect link(s)?

Rationale:

The changes to BR were for clarification rather than alteration. |

Figure 3-20. Resolve Suspicions Dialog

Clearing Suspect Links When Replacing a Requirement

When a requirement under suspicion is modified and saved, the suspect links may be automatically cleared, assuming this option has been selected by the administrator. Otherwise, the suspect link must be cleared after making the change.

The exact behavior depends on the local configuration (see ["Suspect Links" on page 78](#)).

Using the Suspect History

Whenever a requirement becomes suspect, an entry in the Suspect History is created. Each entry provides detailed information about the related clearance process.

To open the Suspect History:

- 1 Select the desired requirement in a work pane.
- 2 Select **Open** from the **Requirements** set of the **Actions** pane.
- 3 Expand the **Links** section.
- 4 Click **Suspect History** to open the **Suspect History** dialog.

The Suspect History table provides the following information and functionality:

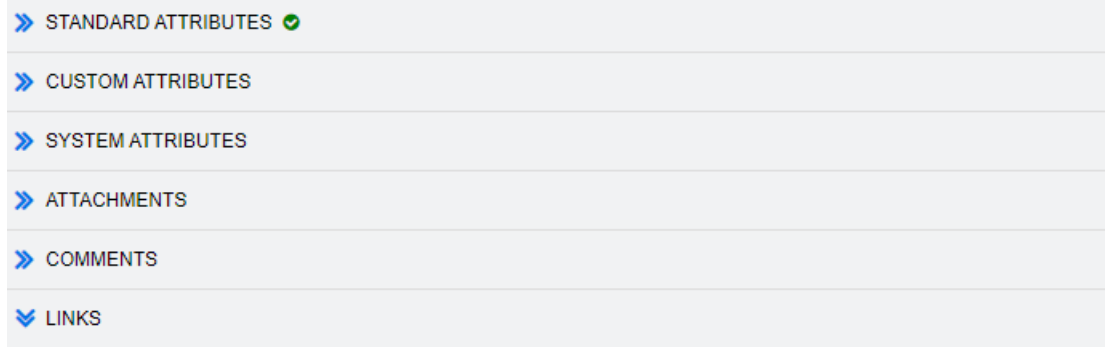
Column	Description
Class	Shows the class of the linked requirement.
PUID	Shows the PUID of the linked requirement. Clicking the PUID opens the linked requirement for editing.
Attribute	The name of the attribute that changed and made the requirement suspect.
New Value	The new value of the changed attribute.
Modified By	The name and/or ID of the user who modified the requirement and made the requirement suspect along with the date and time of the change.
Suspicion Cleared	Shows the name and/or ID of the user who cleared the suspect status for the linked requirement along with the date and time the suspicion was cleared. Clicking the user name or ID opens a popup with information about the user. The reason why the suspect status was cleared is also shown: ■ Manual: The user shown under Cleared By cleared the suspect status manually. ■ Replaced: The user shown under Cleared By cleared the suspect status by replacing the requirement with a new version.
Rationale	A comment added by the user responsible for the resolution.

Inherited Links

When proposing a requirement change (i.e., creating a proposal), all links associated with the originating requirement are inherited.

To identify inherited links:

- 1 After selecting the desired proposal in a work pane, select **Open** from the Requirements set of the Actions pane.



[Browse Links](#) [Suspect History](#)

» ECPs (0 links)

» Product_Requirements (3 links)

	 Rqmt ID	Title
	PROD_000020	256 color VGA
	PROD_000021	Run on 300 Mhz celeron with 32 megs of ram
	PROD_000022	Install footprint less than 5 megs of disk space

- 2 Expand the **Links** section.
- 3 Open a class which has links.
- 4 Inherited links are marked by  .



NOTE Inherited Containers

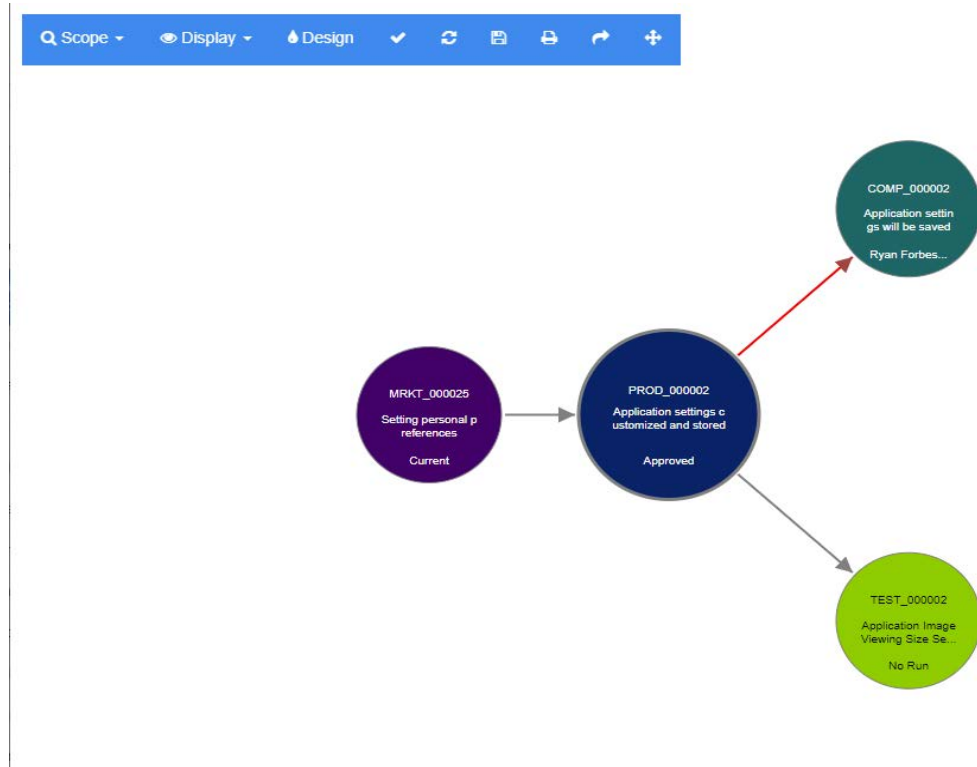
When proposing a requirement change, collections containing the requirement will receive the change, if accepted, and until then will be marked by  . For further information, see chapter "[Container Properties](#)" on page 166.

Using Link Browser

Given a selected requirement object(s), the Link Browser displays all related objects.

To access Link Browser, select one or several requirements from almost any list in the product, and select Browse Links from the **Action** Pane.

From the link section of an open requirement, Browse Links can also be accessed.



Clicking on a displayed requirement expands the view to their related requirements and, if selected, the containers to which they belong. Double-clicking a requirement opens the *Edit Attributes* dialog.

Link Browser allows zoom in or zoom out by turning the mouse-wheel together with the functions accessible through the Browser Menu Bar.

The menu bar provides access to these general functions:

Scope

Opens a sub-menu with these entries:

Classes and Relationships: Allows to select classes and/or links from one class to another class the linked requirements must belong to in order to be displayed. If you unselect all classes, Link Browser will only show the current class.

Category: Allows to select the category the linked requirements must belong to in order to be displayed.

Container: Allows to select which container the linked requirements must belong to in order to be displayed.

After making your changes, click on **Apply**.

Display

Display opens a sub-menu with these entries:
Containers

Containers: If checked, Link Browser shows the containers the requirements belong to. A container is displayed as a light blue rectangle.

Only Current Objects: If checked, Link Browser only shows current requirements and links. The status of a non-current requirement is shown at the bottom of the requirement.

Show Deleted Links: If checked, Link Browser also shows deleted links. A deleted link is shown as a dashed line.

Highlight Suspect Links: If checked, suspect links will be colored red.

Relation depth: The specified value defines to which depth links should be followed when a requirement is loaded or clicked on. A value of 1 means that only children are displayed. Setting a value of 2 means that children and grandchildren are displayed.

After making your changes, click **Apply**.

Design

Opens the *User Settings* dialog which allows the color for each class to be set. For details, see "[Link Browser Settings](#)" on page 87.



Apply: Applies the option changes and loads the objects based on the current view.



Reload: Applies the option changes and loads the objects based on the original object.



Save: Creates an image of the current Link Browser dialog which can be downloaded.



Print: Prints the Link Browser dialog.



Return to default filter: Resets the scope to its default.



Move Nodes: allows user to reposition object nodes.

Right click a node for requirement menu

This context menu is only available when selecting a requirement. Depending on process rules and status, not all of functions may be available for every requirement:

Open: Opens the dialog for viewing or editing the requirement's attributes.

Browse Links: Opens a new Link Browser dialog with the selected requirement as parent.

Delete: Deletes the selected requirement.

Remove: Removes the selected requirement.

Undelete: Undeletes the selected requirement. To show deleted links you must uncheck '**Only Current Objects**' and check '**Show Deleted Links**' under display.

Resolve Suspicions: Clears all suspect links.

Create Link: Opens the **Create Link** dialog. This allows linking an existing requirement to one selected from the list presented see ["Create Link or Link Existing" on page 147](#).

Create New & Link: When selecting a class from the sub-menu, this opens the New requirement dialog for the selected class. When saving the requirement, the new requirement is linked to the selected requirement.

Add to Collection: Opens the **Add to Collection**. The requirement will be added to the collection selected from the list.

Context Menu for Links

This context menu is only available when selecting a link. Not all of these functions may be available for every link:

The context menu provides these functions:

Delete: Deletes the link.

Remove: Removes the link.

Undelete: Undeletes a link.

Show Suspect Reason: Opens the **Suspect Reason** dialog, which shows which requirement and attribute change caused the requirement to become suspect. For further information see chapter ["Suspect Links" on page 158](#).

Resolve Suspicion: Clears the suspected link.

The Containers Section

Listed under the Containers Section of an open Requirement are all Documents, Snapshots, Collections and Baselines that contain the requirement.

The expanded **Container** section offers the following functions:

	Opens the Columns dialog, providing a mechanism for choosing the attributes to display in the expanded Containers Section. Highlight attributes to display on the left and use the arrows to move them to the right. For additional details see Container Properties .
	Opens the <i>Add to Collection</i> dialog allowing users to add the current requirement to a selected collection. When you click the icon, if you do not see the target collection listed, check the categories setting, you might want to move it to the root. For details, see Adding Requirements to a Collection .
	Opens the <i>Add to Document</i> dialog allowing users to add the current requirement to a selected document. When you click the icon, if you do not see the target document listed, check the categories setting, you might want to move it to the root. For details, see Adding Requirements to a Document .
	Remove from Collection: Removes the open requirement from the selected collection(s). Select the Collection from which you want to remove the requirement, and click the remove icon.
	Expand the containers subsection to view, create, or remove links within the context of the open object and the specific container. The version of the linked object listed corresponds to the version of the object in the container. See the Links section to list only links to the current version of an object.
	Open Container: Opens the desired container. If the container is a document or snapshot, it will open at the first location of the requirement within the document. If the container is a collection or baseline, it will open the container with the open requirement highlighted.

The list of containers to which the open object is a member are listed in a table. You can sort the entries within that table by clicking a column header.

	Ascending order: The entries are sorted by the values of the marked column in ascending order (0...9, A...Z).
	Descending order: The entries are sorted by the values of the marked column in descending order (9...0, Z...A).

Opening a Container

For a quick view of either Document, Snapshot, Collection or Baseline from a requirement open for editing:

- 1 Expand the Containers section of a requirement open for review or edit.
- 2 Click  next to the container you want to open.

Container Properties

In the *Container Properties* dialog (see [Figure 3-21](#)) users can choose the container-related attributes to be displayed in the expanded **Container** section.

To include columns:

- 1 Select one or more columns from the **Available Columns** list.
- 2 Click  to add them to **Selected Columns**.

To specify column order:

- 1 Select one or more columns in the right-hand list.
- 2 Click  or  to specify in which order you want the columns to appear.

To remove columns:

- 1 Select one or more columns in the right-hand list.
- 2 Click  to remove the selected columns.

In addition, users may choose the following:

Child Document information: Check the box to include details for child documents that have inherited the requirement.

Added By Information: Check the box to include the user responsible for adding the object to the container, and the date on which it was added.

Set as Instance Settings: The Instance Administrator may choose to make the settings the default for those using Instance Settings.

Container Properties ?

▼ COLUMNS TO DISPLAY

Available Columns:

- Description
- Created By
- Owner
- State
- ID
- Approver
- Author
- End Date
- Reviewer
- Start Date
- Status Log

Selected Columns:

- Name
- Category
- Time Created
- Time Modified
- Modified By

▼ OPTIONS

☐ Show child documents where requirement is inherited

☒ Show 'Added By' information

Set as Instance Settings

OK Cancel

Figure 3-21. The Container Properties Dialog

Inherited Containers

When creating a change proposal, any containers holding the original requirement are listed as **To Be inherited**. Based on process, the proposed requirement will replace the original version once **Accepted**.

To identify inherited containers:

- 1 After selecting the desired proposal in a work pane, select **Open** from the Requirements set of the Actions pane.
- 2 Expand the **Container** section.
- 3 Containers into which the proposed requirement is **To Be Inherited** are marked .

Working with File Attachments

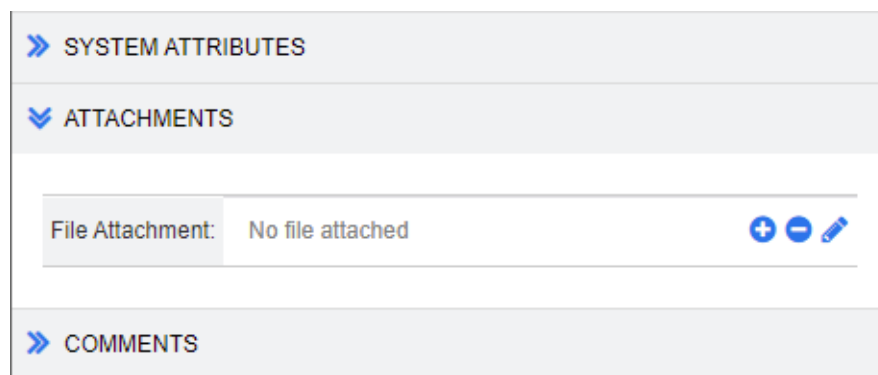
One or more files can be attached to requirements as attributes.

Each file attachment attribute is represented by a single line in the **Attachments** section of the open requirement dialog box. Depending on the configuration of the file attachment attribute, a single or multiple files can be attached.

If there is no **Attachments** section in your requirement, and, therefore, no ability to attach a file, request that the Instance Administrator add one or more File Attachment attributes to the relevant class. For more information, see ["Attribute Definition" on page 533](#)

To attach, replace, delete, or download a file:

- 1 After selecting the desired requirement in a work pane, select **Open** from the **Requirements** set of the **Actions** pane.
- 2 If it is collapsed, expand the **Attachments** section:



Note: If there is no

- 3 Do any of the following:
 - : Click this button to attach a file to the requirement. The Add Attachment dialog opens. Type the full path to the file or click **Browse** to locate the file, and then click **OK**.
 - : Click this button to detach the file from the requirement.
 - : Click this button to replace the existing file with a different file. The Replace Attachment dialog box opens. Type the full path to the file or click **Browse** to locate the file, and then click **OK**.
 - **File Name**: Click the filename link to open the file. If your organization has set security such that files must be downloaded before opening, the file will be downloaded.
- 4 **Show navigation bar / Hide navigation bar**: Click to show/hide the navigation bar at the bottom of the dialog. You can browse through the requirements in sequence with the **First**, **Previous**, **Next**, and **Last** controls.
- 5 Click one of the following buttons:

- **Copy** to close the dialog and copy the attribute values for use in creating a new requirement. The New *ClassName* dialog opens (see ["Attribute Types" on page 115](#)).



NOTE Populate on Copy

Attribute content may be copied into the new requirement only if the administrator selected the **Populate On Copy** option when defining the attribute. See ["Attribute Properties" on page 535](#)

- **Update** to close the dialog and save your changes without creating a new version of the requirement. (This option is not always available and is not recommended. Update saves 'in place' with no new version created to maintain object history.
Update & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.
- **Save** to close the dialog and save your changes as a new version of the requirement.
Save & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.

Working with Group Attributes

A group attribute is like a list attribute in that it provides a predefined list of values for user selection. But unlike a simple list attribute, a group attribute is composed of a series of sub attributes. The choices available to the user depend upon the selections they made in the higher level, or parent, attributes within the group attribute.

For example, a group attribute named *Operating System* contains the sub (member) attributes: *Platform*, *Family*, and *Version*. *Platform* is the first (parent) attribute in the group and includes the following values for selection: *Mobile*, *Desktop*, and *Server*. If *Desktop* is selected, desktop operating system names are available for selection in the

Family sub attribute. If one of the other values is chosen in Platform, such as Mobile, The Family attribute would show mobile operating system names.

Tests: TEST_000001

ALL STANDARD **CUSTOM** SYSTEM ATTACHMENTS LINKS (4) HISTORY (7) CONTAINERS

Designer: Engineer 1 Estimated DevTime: 0

Execution Date: 29/11/2021 Execution Status: Passed

Operating System: **Operating System**

Platform	Family	Version
Desktop	Windows	XP
Desktop	Windows	7

Planned Execution Date: 11/30/2021

Prerequisites:

In the example above, the Family sub attribute also has a child attribute, Version, whose available values depend upon the selection made for Family. The chain of dependencies flows from left to right through the sub attributes of the group attribute.

In the Grid View, the example looks like the selected row of the image below:

Tests: TEST_000001

ALL STANDARD **CUSTOM** SYSTEM ATTACHMENTS LINKS (4) HISTORY (7) CONTAINERS

Designer: Engineer 1 Estimated DevTime: 0

Execution Date: 29/11/2021 Execution Status: Passed

Operating System: **Operating System**

Platform	Family	Version
Desktop	Windows	XP
Desktop	Windows	7

Planned Execution Date: 11/30/2021

Prerequisites:

Show navigation bar ☐ Close after save

Update Copy Copy with Links Cancel

To quickly create value-sets representing each possible value of a given member, select the **Select All** drop-down menu item for that member.

For display in the grid, the individual values of the group attribute are separated by a dash character (-). The first line (value-set) in our example is: Desktop-Windows-7, so Desktop is the value of Platform, Windows is the value of Family, and 7 is the value of Version.

The icons on the right of each entry provide access these functions:

-  Adds a new (empty) row
-  Adds a new row with the values of the selected row
-  Removes the selected row; the **Clear All** removes all rows in the group.

Depending on the configuration,  and  may not be available, in which case you may only select one row of values for this group attribute.

Polling

Polling allows you to solicit feedback about a requirement from selected users. Polls are typically used to decide whether a specific requirement should be accepted, or to reach consensus concerning the content of a requirement.

A poll consists of a question, at least two answers, and at least one participant. In RM Browser, if you have the appropriate permissions, you can create and modify polls. Poll participants use RM Browser to vote and view current poll results.

Creating a Poll

A user with the "Create" permission for the Poll class can create a poll. Before a poll can be created, the Poll class and a relationship to the relevant classes must be added using the Schema Definition. When creating relationships between other classes and the Poll class, the other classes must be primary and the Poll class must be secondary.

To create a poll:

- 1** After selecting the desired requirement in a work pane, select **Setup Poll** from the Requirements set of the Actions pane. The **Setup Poll** dialog opens.
- 2** Type the title of the poll. The poll title does not have to be unique; other polls can have the same title.
- 3** Type the question for which you need feedback.
- 4** Type at least two answers to the poll.

There is no practical limit to the number of answers that you can include. When you begin typing in the last answer field, a new answer field is automatically created below it.

Setup Poll: COMP_000017

GENERAL PARTICIPANTS

Title: Documentation

Question: What documentation should be included in this package?

Answers:

- Getting Started Guide
- Online Help
- Tutorial**

Response deadline: No deadline

Start **Cancel**

5 To rearrange the answers:

- Click the **insert** button to add a new answer above the selected answer, instead of adding it to the end of the list.
- Select an answer and click the **delete** button to delete it. Blank answers do not have to be deleted because they are ignored.
- Click the up arrow and down arrow buttons to move the selected answer up or down in the list.
- Click the **sort** button to sort the answers alphabetically.

6 In the **Response deadline** section, either select **No deadline** or select the date and time that the poll should close.

The poll closes when the selected date and time have passed, when the poll creator clicks the **Stop** button, or when all participants have voted.

7 Click the **Participants** tab.

8 Select the users you want to participate in the poll. A minimum of one participant is required.

If you select a user group, its members are displayed below the lists on the **Create Poll** dialog box.

Setup Poll: COMP_000017

GENERAL **PARTICIPANTS**

Choose users to include

- <All Users>
- <Administrators>
- <BUSINESS_ANALYST>
- <icDemo Users>
- <MANAGER>
- Alexis Grosby
- Carter Benton
- Daniel Hughes
- Emma Commar
- Eric T. O'Brien
- Erica Morgan
- Ethan Hyde
- Henry Miller
- Hercule Poirot
- James McCall
- Jess Mack
- Jordan Cooper
- Joseph Wilson
- Julia Combs

Users

Members of group All Users:
 MANAGEMENT; EPHOTO_INFO; ENGINEERING; TEST_MANAGER; BUSINESS_ANALYST; DEV_MANAGER;
 RTMADMIN; PRODUCT_MANAGER; TEST; TRAINING; SUPPORT; DEV; JOE; QA; MARKETING;
 PROJECT_MANAGER; TECH_PUBS; EPHOTO; ADMINISTRATION; SALES; DEVELOPMENT

Start Cancel

9 Click **Start** to start the poll.

Modifying a Poll

The user who created the poll or a user with the "Update" permission for the Poll class can modify an existing poll. If the poll is already active, you can stop the poll, change the deadline, or add users or groups to the list of participants. The user cannot change the poll title or question.

To modify a poll:

- 1 Click **Modify** under **Polls** on the **Edit Attributes** dialog box or on the Requirements View. The **Modify Poll** dialog box opens.
- 2 Change the polling information.
- 3 Click **Modify**.

Closing a Poll

To close a poll:

- Click **Modify** under **Polls** on the **Edit Attributes** dialog box. The **Modify Poll** dialog box opens.
- Click **Stop**.

The poll also closes if the specified deadline passes or if all participants have voted.

Casting a Vote

Users with "Read" permission for the Poll class can vote in a poll. Poll participants cast votes from the **Cast Vote** dialog box. Participants typically receive an e-mail message when the poll has started that provides a link that takes them to the **Cast Vote** dialog box. The **Cast Vote** dialog can also be accessed from the **Polls** section of the **Edit Attributes** dialog box or from the List view of Requirements View.

To cast a vote:

- 1 Do one of the following:
 - Click the link in an e-mail message you received, and then log in to Dimensions RM.
 - Click the **Vote** link from the **Polls** section of the **Edit Attributes** dialog box or List view of Requirements View.

The **Cast Vote** dialog box opens.

- 2 Select a single answer. Before you vote, you can view the details of the requirement for which the poll is being placed, and view the current results of the voting. To do so, click the link at the bottom left of the dialog box.
- 3 If you want, type a comment in the **Additional comment** section.
- 4 Click **Vote**.

Viewing Polling Results

You can view the details of a poll that is in progress or has already completed. The current polling status is displayed after you cast a vote. You can also view the polling status from the **Edit Attributes** dialog box or the List view of Requirements View.

To view polling results:

- 1 Do one of the following:
 - Cast a vote.
 - Click the **View details** link at the bottom of the **Cast Vote** dialog box before you cast your vote.
 - Edit a requirement and display the Edit Attributes dialog box.
 - Navigate to the List view of Requirements View.
- 2 If you used the first method in [Step 1](#), the **Poll Results** dialog box opens.
- 3 If you used the second, third, or fourth method in the preceding step, expand the **Polls** section on the dialog box that opens (if it's not already expanded), and then expand the poll you want to view.
- 4 To view who voted for each answer and their comments, click **Show details**. To hide this information, click **Hide details**.
- 5 To view a list of participants who have not voted yet, click **View users who haven't voted**.

Adding Active Polls to My Work Dashboard

Polls can be viewed using the **Recent Polls** report, a built-in report in the **My Work** dashboard.

To add a built-in report to the My Work dashboard:

- 1 Open the Home View.
- 2 Select the **Dashboards** tab.
- 3 Select **Add Widget** in the **Dashboard** set of the **Actions** pane.
- 4 In the **Report Type** box, select **My Work**.
- 5 Select **Recent Polls** and click **Save**.

The History Section

Each object in the database, whether a Change Request, a Test Case, a Defect or a Requirement maintains its history. The history provides the team with information about the object and how it has been modified over time. The **History** section is always included on the default forms when opened for edit or review.

The history section not only shows who made which changes and when, it allows users to compare versions, with additions, deletions and changes marked in the report.

In this section we describe :

The default settings and icons: ["Viewing Requirement History" on page 176](#)

Changing the layout of the History Display: ["Changing History Properties Display" on page 177](#)

Investigate what was changed, who changed it and when: ["Viewing History Differences" on page 178](#)

Making the previous version of an object current: ["Making a Previous Version Current" on page 178](#)

Changing the version of a requirement contained in a document: ["Changing Requirement Versions in Documents" on page 179](#)

Viewing the graphical history of an object: ["Using Pedigree View" on page 179](#)

Viewing Requirement History

To view the history of a requirement:

- 1 After selecting the desired requirement in a work pane, select **Open** from the Requirement set of the Actions pane.
- 2 You may scroll down to expand the **History** section, or you may click the History link at the top of the form.
The section opens with the latest version of the object at the top.

	Object Version ID	Workflow State	Owner	Time Modified	Modified By	Current Status
	9	Proposed	 Julia Schoeller	20-AUG-2025@06:11:44	 Ryan Forbes	Current
 	8	Proposed	 Julia Schoeller	05-MAR-2014@16:23:25	 Julia Schoeller	Replaced
 	7	Proposed	 Julia Schoeller	05-MAR-2014@14:36:58	 Julia Schoeller	Replaced
 	6	Proposed	 Julia Schoeller	27-FEB-2014@18:13:28	 Jutta Schoeneberger	Replaced
 	5	Proposed	 Julia Schoeller	07-JUN-2013@13:58:44	 Julia Schoeller	Replaced
 	4	Proposed	 Julia Schoeller	30-MAY-2013@17:32:58	 Julia Schoeller	Replaced
 	3	Proposed	 Julia Schoeller	30-MAY-2013@17:32:06	 Julia Schoeller	Replaced
 	2	Proposed	 Julia Schoeller	30-MAY-2013@16:24:55	 Julia Schoeller	Replaced
 	1	Proposed	 Julia Schoeller	16-OCT-2012@15:27:29	 Julia Schoeller	Replaced

Figure 3-22. To change the attributes displayed see *"Changing History Properties Display"* on page 177.

Icon	Description
	Clicking the information icon opens the History Details dialog, displaying a quick compare between the current and the selected item.
	Opens the version of the object selected.
	Highlighting one version in the history list and then choosing Differences will compare the selected version with the open object. Selecting two versions and before choosing differences will compare the two. See <i>"Viewing History Differences"</i> on page 178.
When Using Branching, additional information is listed under Current Status	
	The requirement was branched (provided) to a different product or project or the requirement version was used to create a new version using synchronization.
	The requirement was branched (provided) from another product or project.
	The requirement has been synchronized.

Changing History Properties Display

To revert the contents of a requirement version to that of an earlier version, see *"Making a Previous Version Current"* on page 178.

The attributes included in the History display can be modified using **Properties**.

To change the attributes displayed:

- 1 In an open requirement object, expand the **History** section.
- 2 Click **Properties** to access the **History Properties** dialog.

- 3 To specify the attributes to display, select attributes from the left and use the arrows to move them to the right. For details see chapter ["Choosing the Attributes to Display" on page 40](#).
- 4 To specify the sort order, see chapter ["Sorting Order List" on page 40](#).
- 5 The attributes selected for display, as well as their order, are **remembered for each class** and are used when viewing History for any requirement in that class.

Viewing History Differences

The difference between any two requirement versions can be viewed using History Differences. The version with the lower ID will always display changes as **replaced**

To view the differences.

- 1 Expand the History section.
- 2 Perform one of the following actions:
 Select a single object from the history list, and then click **Differences**.
 Select two objects from the history list and then click **Differences**

▼ HISTORY					
Pedigree					
Properties Differences ↺					
	Object Version ID	Time Modified	Modified By	Current Status	Hierarchy Parent
1	1	09-NOV-2001@07:45:36	Carbor Benton	Replaced	RMDEMO
2	2	18-MAY-2006@09:09:36	Shauna Robinson	Replaced	Interface
3	3	25-MAY-2006@14:09:37	Shauna Robinson	Proposed	Interface
4	4	25-NOV-2014@08:22:30	Shauna Robinson	Replaced (Baselined)	Interface

The **History Differences** dialog box opens, displaying visual indications of each change made between the two versions.

Making a Previous Version Current

It is possible to revert the current version of an object to the contents of a previous version selected from the History section. A new version is created populated with the user content contained in the previous version. It is also possible to revert the content of a version using the Pedigree View, for details see ["Using Pedigree View" on page 179](#).

Attributes controlled by process or tool, e.g., **Workflow State**, will not be applied.

To make a previous version current:

- 1 Expand the **History** section, if it is not already expanded.
- 2 Select the requirement version you want to make current.
- 3 Click the ↺ icon from the History tab header.

Changing Requirement Versions in Documents

Opening a requirement to the history section from within a document provides users the ability to **exchange** the requirement version included in the document with another. This exchange may be necessary because the latest version of the requirement is not relevant to the document, or because **'Update to Current'** was not checked and the latest version is exactly what is needed.

To change the version contained within the document:

- 1 From within the document, open the requirement for which the version must be exchanged.
- 2 Expand the **History** section from within the document.

HISTORY				
Pedigree		Properties Differences <		
		TIME MODIFIED	MODIFIED BY	CURRENT STATUS
		18-MAY-2006@09:17:06	Ryan Forbes	Replaced
		25-NOV-2014@08:23:23	Ryan Forbes	Replaced
		30-SEP-2015@01:54:24	Ryan Forbes	Current (Baselined)
POLLS				

- 3 Find the correct version and click , this opens the Exchange Requirement dialog.
- 4 If your process creates all documents with **'Update to Current'** enabled (i.e., the latest version of a requirement is always included in a document), the Exchange dialog will ask "Are you sure..." and, if you are, click the **Yes**.

Exchange Requirement

Are you sure you want to exchange requirement 'MRKT_000030' version 3 with version 1?

Also exchange requirements in these document(s):

☐	Name	Time Created	Time Modified
☐	ePhoto Tablet Requirements	30-AUG-2021@12:32:08	30-AUG-2021@12:32:08

- 5 If your process includes documents or sets of documents that do have **'Update to Current'** enabled (i.e., the requirement(s) included in documents are always updated manually), the Exchange dialog will not only ask for confirmation, but will also include other documents that contain the requirement, and do not have **'Update to Current'** enabled.

By selecting the documents in the list, the requirement version will be exchanged in these documents as well. To select a document, click into the box next to its name. To select all documents, click the box in the heading (next to the **Name:** heading).

Using Pedigree View

Pedigree View is a graphical representation of the history of a requirement.

The Pedigree View uses the default settings of the Link Browser, and will reflect changes made to those settings.

To open Pedigree View, follow these steps:

- 1 Select the desired requirement in the Requirements View.
- 2 Click **Pedigree** in the Requirements set of the Actions Pane. This opens the **Pedigree View** dialog.

If the requirement is shown in the **Edit Attributes** dialog, you can follow these steps:

- 1 Expand the **History** section.
- 2 Click **Pedigree**. This opens the **Pedigree View** dialog.

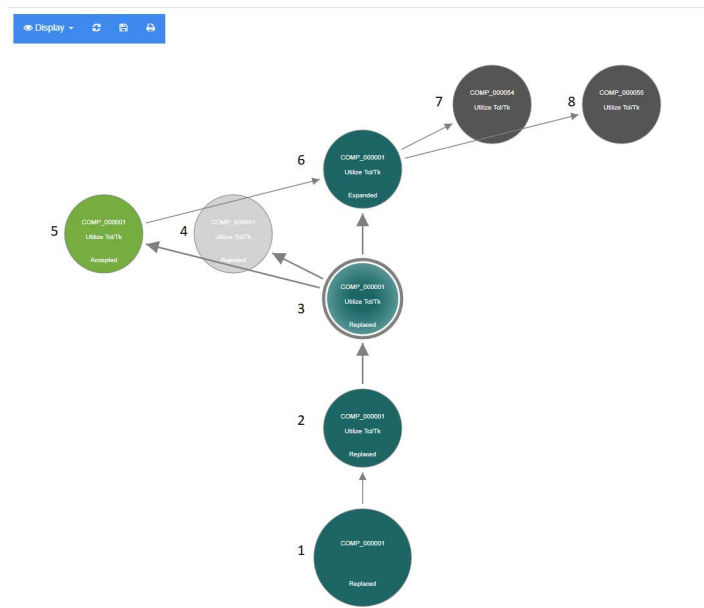


Figure 3-23. Pedigree View of a requirement

The elements in the figure above have the following meaning:

- 1 This is the original requirement.
- 2 This is a modified version of #1.
- 3 This is a modified version of #2.
- 4 This is a rejected proposal based on #3.
- 5 This is an accepted proposal based on #3.
- 6 This is the requirement which resulted on the accepted proposal (#5).
This requirement has been expanded (split) into 2 requirements (#7 and #8).
- 7 This is a requirement which was created by expanding #6.
- 8 This is a requirement which was created by expanding #6.

The Pedigree View tool bar provides these functions:



Reload: Reloads the Pedigree View dialog.



Download: Creates an image of the current Pedigree View dialog which can be downloaded.



Print: Prints the Pedigree View dialog.

Graph Editor

The graph editor allows you to create and modify sophisticated diagrams and graphs. This is a list of some of its features:

- Create new diagrams and graphs
- Edit existing diagrams and graphs
- Import Microsoft ® Visio files (in vsdx format)
- Provides a large number of shapes and charts
- Allows referencing of images (by URL)

For details see:

["Opening the Graph Editor" on page 181](#)

["The Graph Editor Dialog" on page 182](#)

["Graph Editor File Menu" on page 182](#)

Additional information on the Graph Editor can be found at <https://support.draw.io/display/D0/Draw.io+Online+User+Manual>.

Opening the Graph Editor

To open the graph editor in a requirement:

- 1 Open an existing requirement or create a new requirement.
- 2 Click into an HTML enabled text attribute.
- 3 Click .

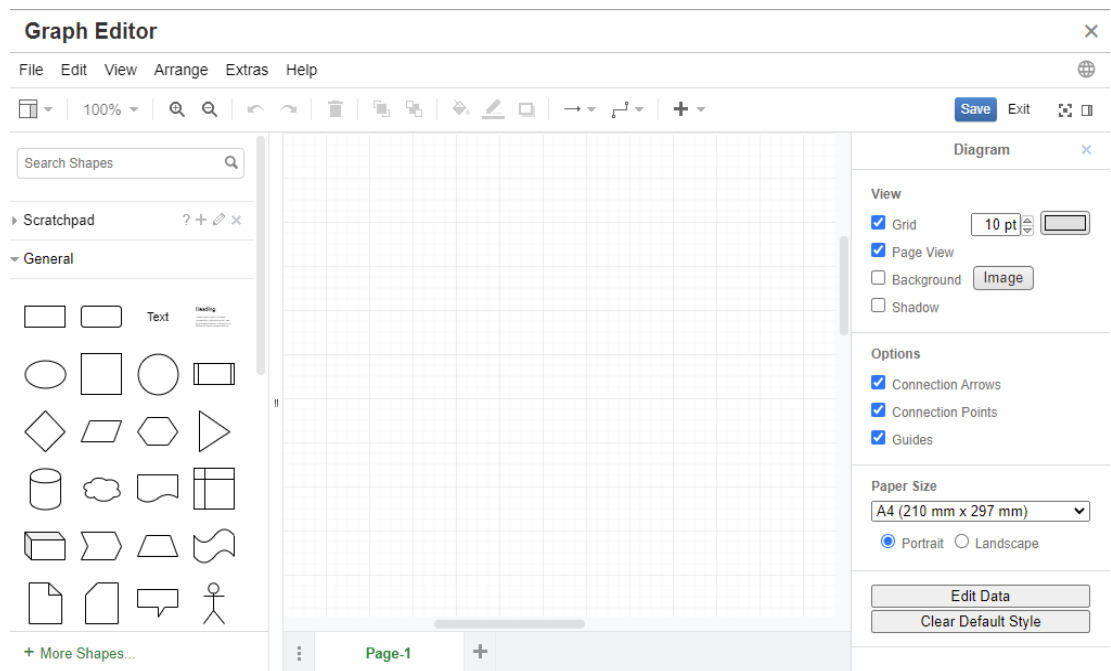
To open the graph editor in a document:

- 1 Open the chapter editor.
- 2 Click into the chapter description box.
- 3 Click .

The Graph Editor Dialog

The Graph Editor dialog allows editing diagrams and graphs. It is divided into these sections:

- Menu Bar
- Toolbar
- Shapes Panel
- Edit Area
- Diagram Panel or Format Panel



Graph Editor File Menu

The **File** menu provides the following functions:

- 1 Import from:** Allows import of Microsoft ® Visio files in vsdx format and other file formats. The following file formats can be imported:
 - MS Visio in **VSDX** format; other Visio formats (e.g. VSD) are not supported
 - Images in GIF, JPG and PNG format
 - HTML files

To import a file, do the following:

On the File menu, point to Import from, then select the file location:

Device...: This opens the **Choose File to Upload** dialog. Then, select the file you wish to import and click **Open**.

URL...: Enter the URL of the file you wish to import into the **URL** box.

Click **Import**.

- 2 Export as:** Allows users to export the graph into different formats.
- 3 Page Setup:** Opens a dialog which allows you to choose:
 - Paper size
 - Orientation
 - Background color
 - Grid size (of the edit area)
- 4 Print:** Provides the following functions:
 - Printing
 - Preview
 - Scaling

The Quick Search View

Quick Search is available from under **Views** views menu. It provides access to every object in the instance to which the user has, at minimum, read permission.

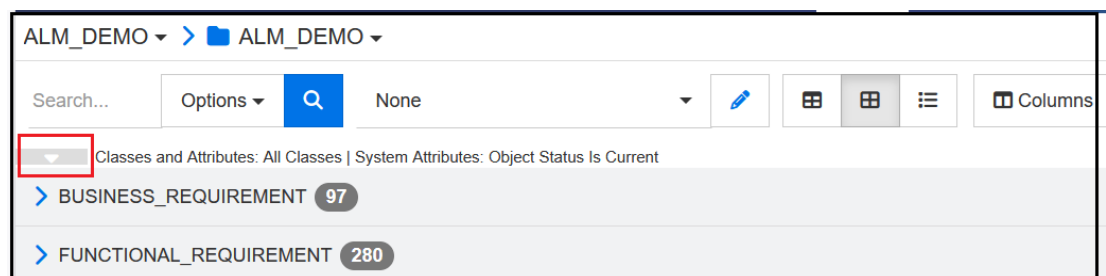
In Quick search users may develop filters to scan the complete pool of thousands, or tens of thousands of objects. The filters limit the view to include attributes containing specific content, requirements created after or before a given date and/or by a specific user; any combination of selection based on attribute content. For example, Joe Wilson can list the objects he modified between 1 and 13 January 2015 (or even 2016) listed with a High priority and included in Release 12.11.4.

The **Quick Search View Content Header** provides the ability to apply a search string, with options, a simple mechanism for filtering. For details, see ["The Content Header - Search String and Options" on page 183](#).

The creation and application of Quick Search Filters from both Quick Search and the Requirements Tab in Home View, see ["Quick Search Filtering" on page 185](#).

The Content Header - Search String and Options

The Quick Search Content Header, appears directly below the Category Breadcrumb, and provides the ability to use a.



1 The Search Box:

In the **Search** box, any text string may be entered.

- If the string contains multiple words enclosed in quotation marks, the search returns requirements containing the full string, otherwise the search returns requirements containing each of the individual words in the string.
- The search string is only applied to text and alphanumeric attributes **visible** in the display.
- To change the displayed columns see chapter ["Quick Search Settings" on page 81](#) or Click  **Columns**

2 The **Options** menu can limit the search to one or more of the following:

a Limit the search to Requirement Identifier, Title or Description

PUID: Select this checkbox, if you want to limit your search to the attribute identifying the requirement ID. Depending on the class configuration, this attribute may be listed as Rqmt. ID or may use a local identifier.

Title: Select this checkbox to limit your search string to the *Title* attribute. Depending on the class configuration, the Title attribute may have been assigned a different display name.

Description: Select this checkbox to limit the search to the object text or statement.

b **Include or exclude Subcategories in the search:**

Select this checkbox to expand the filter to include the category displayed in the Breadcrumb as well as the child categories. Clear this checkbox to restrict the query to the current category.

c **Exclude Branched:**

This option will be displayed if the instance is using Branching/Merging. Selecting this option will limit the return to requirements that have not been branched. For further information on branching/merging, see chapter ["Branching and Merging Requirements" on page 197](#).

The Compressed Filter Content:

The thin line below the content header is a compressed filter. It is there to give an overview of the filtered content, while using a minimum of space. [Figure 3-24](#) indicates that the objects listed are in the Business Requirement class, a priority is selected, Object Status is Current (the tip or latest version of the requirement), and the 'modified by' attribute has been set.

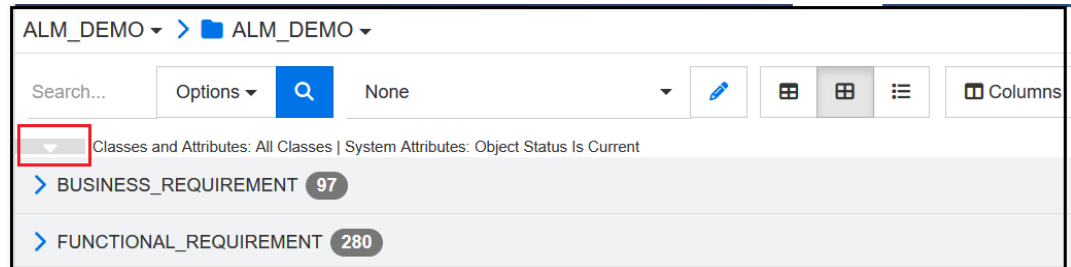


Figure 3-24. To expand the filter dialog, click on the down-arrow

To expand the compressed filter dialog, click the arrow. Once expanded, the filter can be modified or edited. Any system, custom, or special attribute may be included in Quick Search or the Home View filters.

Each time you enter or modify the search criteria:

Be sure to click  to refresh the displayed content.

Quick Search Filtering

The Quick Search filters control the requirements included in the display. Choose your criteria, and click **the search icon** . The filter can be saved for next time.

To select all Business Requirements, in the current release with links out to Functional, choose:

- Class: Business Class
- Object Status: Current (the default)
- Links Out: Has Links to Functional
- Click  to execute (see [Figure 3-25](#)).

To change the search to Business requirements with 'No Links' to Functional, change the drop-down.

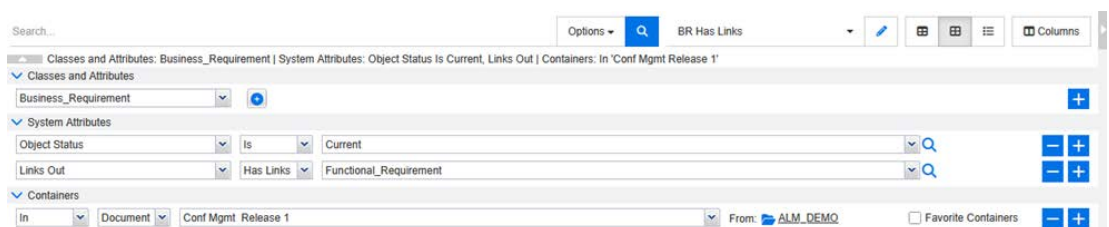


Figure 3-25. Use Quick Search Interactively or Click the Pencil to Edit and Save

The filters are created, modified and selected for use in both Quick Search and in the Requirements Tab in the Home View. Any combination of attribute selection can be used to find the requirements you need.

Changes can be made to the filters interactively in the Quick Search Content Header header (Figure 3-25), or by clicking the  open the Filter Dialog

The **filter dialog** (Figure 3-26) allows users to save the current settings, to create and name a new filter or to edit an existing one.

Figure 3-26. Create or Edit a Filter using the Dialog.

Creating a Filter

If the search includes group attributes see ["Finding Requirements using Group Attributes" on page 188](#).

- 1 Click the  to open the search dialog.
- 2 **Name the filter:** Provide a name for the filter.
- 3 **Category:** To change the **Category** applied to the search, choose an alternate from the category drop-down list.
- 4 **Public Filter:** The check box will only be available if the current user has been granted permission to the **Create Public** Action under Reports.

Public Filters are listed below Private in the Filter dropdown; the names selected in either must be unique.

Populating Interactive and Dialog Filter Detail

- 5 **Classes, Attributes, System Attributes, and Containers.** To expand to populate closed sections click .

a To Add a Class:

Click the  icon to add a new class line.

Select a Class from the drop-down.

b Add Attributes: Click the icon next to the selected class.**c Multiple Custom Attributes Within a Class:**

If more than one custom attribute is selected within a class, it is possible to filter using a combination of '**AND**' and '**OR**' statements.

For example, the search may include items with a High priority **or** those assigned to a specified release.

d Attribute Filter:

- Choose **Is** or **Is Not** to compare content to list criteria.
- Choose **Null** or **Not Null** to include requirements with content or without content in the designated attribute.
- Choose **Contains** or **Not Contains** to include text attributes containing or not containing the text in the designated attribute

e System Attributes:

Select from the list of system attributes and choose. This list includes Current Status, Time Modified, Modified by, or Workflow State, standard attributes for all requirement classes. For a complete list, see [Table 1-1, "RM System Attributes"](#).

In addition, the following may be applied in the System Attribute Section:

- **Comments:** Limit the selection to those with or without comments.
- **Links Out:** Limit the selection to those with or without links out any Class or links to a specified Class or Classes
- **Links In:** Limit the selection to those with or without links in any Class or links from a specified Class or Classes

f Containers:

Allows users limit the search by including only those requirements included in a container.

To limit the search to a Container:

- Choose a Container Category or limit the search to Favorite Containers.
- **In** or **Not In**, Choose requirements that are in a specified container, or not.
- **Choose Container Type**, and then from the drop-down select the container(s)

6 To Save and Execute the Interactive Filter:

- Click the **Save** button to name and save the filter.
- Click  to execute the interactive search.

7 The Save and Execute Buttons in the Filter Dialog:

- Save:** To save the named filter.
- Preview:** To review the results before saving.

- c Cancel:** To exit without saving.
 - d Delete:** To delete an existing named filter.
- 8** To select and execute a saved filter:
- a** Open the list of search filters by clicking the down-arrow on the filter box.



- b** Select an entry from the list.
- 9** To delete saved filters:
- a** Open the list of search filters by clicking the down-arrow on the filter box.
 - b** Move the mouse pointer over the search filter you want to delete.
 - c** Click the Trash Can.
 - d** Click **OK** to confirm the deletion.

10 Refreshing Data

From Quick Search, always Click  to refresh the content in the view.

Finding Requirements using Group Attributes

Normally, all attributes have to match selections when creating a query. As group attributes behave like a table with one or several values per row, Quick Search allows the user to define how the values in should be considered for the search. You can select one of the following:

- Is (AND)
- Is (OR)
- Is not (AND)
- Is not (OR)
- Null
- Not Null



NOTE When specifying only a single row in your query:

- **Is (AND)** and **Is (OR)** return the same results.
- **Is not (AND)** and **Is not (OR)** return the same results.

The following examples use the **Tests** class of the **RMDEMO** instance.

Is (AND)

When choosing the **Is (AND)** operator, a requirement is added to the result list if all values of the group attribute match all queried values.

Example:

- 1** Select the class **Tests**.
- 2** Add the attribute **Operating System**.

- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .
- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the box shows **Is (AND)**.
- 9 Click **Search**.

The result list contains requirements with the **Operating System** attribute having the combination of the following values: **Desktop-Windows-XP**, **Desktop-Windows-Vista** or **Desktop-Windows-7**.

Is (OR)

When choosing the **Is (OR)** operator, a requirement is added to the result list if any of the values of the group attribute matches at least one of the queried values.

Example:

- 1 Select the class **Tests**.
- 2 Add the attribute **Operating System**.
- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .
- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the box shows **Is (OR)**.
- 9 Click **Search**.

The result list contains requirements that contain either **Desktop-Windows-XP**, **Desktop-Windows-Vista** or **Desktop-Windows-7** (among other values) in its **Operating System** attribute.

Is not (AND)

When choosing the **Is not (AND)** operator, a requirement is added to the result list if the values of the group attribute do not match all of the queried values.

Example:

- 1 Select the class **Tests**.
- 2 Add the attribute **Operating System**.
- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .

- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the box shows **Is not (AND)**.
- 9 Click **Search**.

The result list contains requirements with the **Operating System** attribute **not** having the combination of the following values: **Desktop-Windows-XP**, **Desktop-Windows-Vista** or **Desktop-Windows-7**.

Is not (OR)

When choosing the **Is not (OR)** operator, a requirement is added to the result list if the values of the group attribute do not match any of the queried values.

Example:

- 1 Select the class **Tests**.
- 2 Add the attribute **Operating System**.
- 3 In the group attribute boxes, select **Desktop, Windows, XP**.
- 4 Click  .
- 5 In the group attribute boxes, select **Desktop, Windows, Vista**.
- 6 Click  .
- 7 In the group attribute boxes, select **Desktop, Windows, 7**.
- 8 Ensure that the box shows **Is not (OR)**.
- 9 Click **Search**.

The result list contains requirements that contain neither **Desktop-Windows-XP**, **Desktop-Windows-Vista** or **Desktop-Windows-7** in its **Operating System** attribute.

Null

When choosing the **Null** operator, a requirement is added to the result list if no group attribute value has been specified.

Not Null

When choosing the **Not Null** operator, a requirement is added to the result list if any group attribute value has been specified.

Saving Search Filters for Reuse

Quick Search allows users to save filters for use it at a later time. Once you select 'Save' and give the filter a name, it is available for reuse in Quick Search as well as in **Document View**.

To save a search filter:

Global Search

Global Search, accessible using the search icon on the Main Menu bar, provides a facility to search for terms included in any current requirement or in the title of a document, collection or report. Are you searching for all requirements relating to the TDRO component? Or, for all documents containing the term "Verified" in the title - or "Release1"? In all such situations: use Global Search!

The dialog is accessible from the Menu Bar:



- Global Search expands with a click on the search icon.
- Enter a search string, expand the filter to limit the search to Type (Baselines, Collections, Documents, Reports, Requirements, Snapshots) or use the Class Filter to limit the search to selected classes.
- If you clear the box: "Limit Search to PUID, Title" all text and alphanumeric attributes in current objects are searched. System attributes are not searched.
- The search parameters, as well as the results are stored in user settings and reloaded the next time the dialog is opened.
- The result section lists matches in groups of 20, if more remain to be displayed a "Show more..." link provides access to an additional 20 items.
- Search results from the global dialog are limited to 100 items per item type (requirements, reports etc). If the list is longer '> 100' is displayed in the result count. Long requirement lists are more easily accessed, displayed and re-filtered using Quick Search, with the Instance Name (the root) set at the top. This provides access to the full pool of requirements to which you have access.

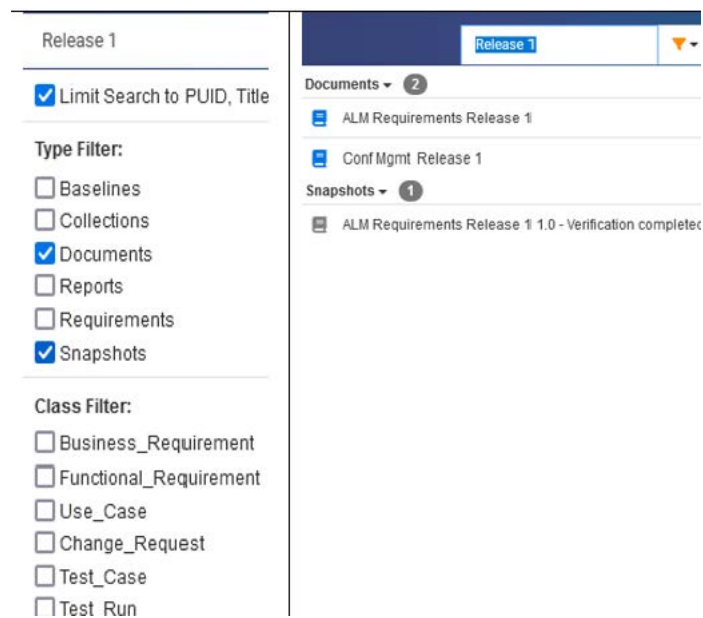


Figure 3-27. Global Search for 'Release 1' in Documents and Snapshots

AI-Powered Generation and Review

Dimensions RM provides facilities for creating and reviewing requirements. The current implementation was built and tested using Google Gemini and ChatGPT, although other solutions adopted by the organization, e.g., LLaMA 3, may also be used.

The Instance Administrator is responsible for configuring the organizations AI solution. See ["AI Administrator Server Setup" on page 562](#) for details.

The functionality available with the full implementation includes:

- The ability to verify Quality.
 - ["Verifying Requirement Quality" on page 192](#)
 - ["Verifying Document Quality" on page 227](#)
- The ability to **generate** test cases, user stories, or missing titles
 - ["Generating Test Cases" on page 193](#)
 - ["Generating User Stories" on page 194](#)
 - ["Generating Requirement Titles" on page 194](#)
- Pass it to AI for Document Review
 - ["Finding Document Conflicts" on page 228](#)
 - ["Applying Analyze Gaps" on page 229](#)
 - ["AI Autocomplete" on page 230](#)

Verifying Requirement Quality

The function allows analysts to write a requirement, and to immediately submit it for review. Applying AI to the review of requirements will help the team to identify ambiguous, incomplete or contradictory requirements before they reach colleagues or stakeholders for review.

Click on **Verify Quality** as part of the Draft process to find out what AI thinks of the statement. Sometimes, even an incorrect assessment from AI can clarify what is unclear about the requirement.

 **Verify Quality** reviews the requirement statement and reports back with its findings concerning those characteristics selected during setup (see [AI Administrator Server Setup](#)). The essential characteristics available for selection include: Atomic, Correct, Complete, Verifiable, Consistent and Unambiguous.

To Verify the Quality of a Requirement:

Highlight a requirement.

From the Requirements section of the Actions Pane, click on  **Verify Quality**. Review and, perhaps, consider incorporating suggestions.

☆ AI Quality Verification				✕
Type	Answer	Reason	Solution	
Atomic	Yes			
Correct	Yes			
Complete	Partial	The feature does not specify how long the selection should be remembered or if there are any limitations on the number of projects that can be stored.	Add specific details on the duration of remembering selections and any constraints on the number of projects that can be stored.	
Verifiable	Yes			
Consistent	Yes			
Unambiguous	Partial	The feature could be clearer on how the selection will be remembered and accessed by users.	Provide more detailed information on how users can access and manage the stored project selections.	

Figure 3-28. Select a Requirement, and consider the AI Responses

Generating Test Cases

Test Cases can be generated from any class with links to the Test Case Class, for example from Functional Requirements and/or Use Cases.

The test case generator will create, and rate, test cases based on input from one or more requirements input. Once a generated test case is accepted for creation it will be linked to the requirement.

We have learned while testing and generating Test Cases for RM, that when the response does not match with our understanding of the requirement statement or the feature, the issue may be with the statement.

To generate Test Cases:

- 1 Select one or more requirements from any requirement list.
 - 2 From the Requirements section of the Actions Pane, select ☆ **AI Generation**.
 - 3 Review the generated Test Cases returned.
 - 4 To create selected elements:
 - Check the box** to select one or more of the proposed test cases.
 - Click Select all** to check all boxes.
 - Click Accept** to create Test Cases from the elements selected.
 - Test Case IDs are listed in the **Accepted** dialog.
 - Test Cases are linked to the selected requirement.
- If no test cases look interesting,
- Click Regenerate** to give it another try.
- 5 Click **Close** to exit the list.

Generating User Stories

Using AI to generate User Stories can not only save object creation time, but it can help to ensure that the use case is well-defined. Using AI Generation for requirement breakdown, along with Quality Verification, can help the team to write more concise requirements.

User Stories are generated from one or more Use Cases.

To generate User Stories:

- 1 Select one or more Use Cases from any list.
- 2 From the Requirements section of the Actions Pane, select  **AI Generation**.
- 3 Review the generated User Stories returned.
- 4 To create selected elements
 - Check the box** to select one or more of the proposed User Stories.
 - Click Select all** to check all boxes.
 - Click Accept** to create User Stories from those selected.
 - User Story IDs are listed in the **Accepted** dialog.
 - Each User Story will be linked to the selected Use Case.
- 5 If the generated stories do not look interesting,
 - Click Regenerate** to give it another try; the alternatives can be interesting.
 - Click **Close** to exit the list.

Generating Requirement Titles

When importing requirements from a solution that does not require titles or when importing data from Microsoft Word or Excel files missing titles, an AI Action is available to generate a title for all of these requirements traveling through life without one.

The titles are added using the **Generate Titles** action from an open document.

To Add Titles:

- 1 Open a document containing requirements without titles
- 2 **Select Generate Titles** from the Document Section of the Actions Pane
 - A message is displayed: **AI Generation Started**
 - Followed by: **AI Generation Started**
- 3 Review the generated titles and accept or modify.

Merging Concurrent Requirement Changes

Most organizations enable concurrent editing (see ["Concurrent Editing" on page 75](#)). This allows multiple users to edit a requirement simultaneously. Given this functionality, users

attempting to save changes to an object that was modified and saved while they were introducing changes can merge their changes with previous edits before saving. This section describes requirement merging.

Changes can be **automatic** or **conflicting**, as described in the following table.

Change Type	Description
Automatic	When the change made by the first user is the same as the change made by the second user or when the change made by the first user is distinct from any change made by the second user, automatic merging can occur because a review of the change is not strictly necessary. However, it is recommended that the second user review the change made by the first user before accepting it.
Conflicting	When the change the second user makes conflicts with the change of the first, the second user must review the changes and do one of the following: • Accept the change the second user made • Accept the change the first user made • Accept the original value • Edit the value directly to combine the changes

The following scenario summarizes the actions that lead to requirement merging.

- 1 Two users edit a requirement at the same time.
- 2 The first user clicks **Save** on the **Edit Attributes** dialog box. The requirement is replaced and the **Edit Attributes** dialog box closes.
- 3 The second user clicks **Save** on the **Edit Attributes** dialog box.
- 4 The second user is notified that the first user made one or more changes to the requirement. The notification either tells the second user that the merge can be done automatically (because the change the first user made does not conflict with the change the second user made) or that the changes conflict and must be resolved before the second user can replace the requirement.
- 5 The second user clicks **OK** on the notification message. The **Edit Attributes** dialog box becomes the **Merge Attributes** dialog box. The **Merge Attributes** dialog box differs from the **Edit Attributes** dialog box in that the **Merge Attributes** dialog box:
 - Has a section at the top that summarizes the changes and provides a user interface for merging the changes
 - Does not have an **Update** button
 - Has visual indications next to its attributes that identify the type of merge that the second user selected
- 6 The second user uses the merge section at the top of the **Merge Attributes** dialog box to resolve the changes as described in ["Viewing Prior Versions of the Requirement" on page 196](#) and ["The Concurrent Merge" on page 197](#).

Merge Status

The merge status of the changes made by Mary and Joe are highlighted in the **Changed Attributes** section at the top of the **Merge Attributes** dialog box.

Component_Requirements: COMP_000024

ALL STANDARD CUSTOM SYSTEM ATTACHMENTS COMMENTS (1) LINKS (1) HISTORY (4) POLLS CONTAINERS Actions

Changed Attributes

Attribute	Changes by Joseph Wilson	Changes by Mary Jones	Merge Status
Text	This effort shall be undertaken using the Tcl/Tk scripting language. This ensures rapid prototyping and high portability. Tcl/Tk currently runs on: Windows 3.11, Windows 95, Windows NT, <u>Windows XP</u> , and various UNIX flavors.	None	 Automatic
Verification Level	<u>Component</u>	~~Component~~ Module	 Conflict
Verification Method	<u>Analysis</u>	~~Analysis~~ Inspection	 Conflict

Category: RMDEMO

STANDARD ATTRIBUTES

Rqmt ID: COMP_000024 Title: Utilize Tcl/Tk

Text:  This effort shall be undertaken using the Tcl/Tk scripting language. This ensures rapid prototyping and high portability. Tcl/Tk currently runs on: Windows 3.11, Windows 95, Windows NT, Windows XP and various UNIX flavors.

Joe made the first change when he added "Windows XP" to the *Text* attribute. In the **Merge Status** column, **Automatic** is selected in the list, because the change does not involve a conflict with a change that Mary made. The icon that represents an automatic merge is a diamond shape with a merge arrow in it  and is displayed to the left of the **Merge Status** list and to the left of the **Text** attribute box in the main part of the dialog box.

The second and third changes raised conflicts. In the second change, Joe changed the *Verification Level* attribute value to **Component**, but Mary changed this attribute value to **Module**. In the **Merge Status** column, **Conflict** is selected in the list. The icon that represents a conflict is a triangle with an exclamation point in it  and is displayed to the left of the **Merge Status** list and to the left of the *Verification Level* attribute in the main part of the dialog box.

The third change also involves a conflict because Mary changed the *Verification Method* attribute value to **Inspection** while Joe changed it to **Analysis**.

Make the changes necessary to resolve conflicts, and **Save** the object.

Viewing Prior Versions of the Requirement

It can be useful to view prior versions of the requirement before you resolve changes.

- The second user can view the original version of the requirement by clicking the **View original version of requirement** button  or by clicking **Original** in the appropriate **Merge Status** column list.
- The second user can view the requirement in the state it was in after the first user made changes but before the second user made changes by clicking the **New version of requirement prior to your changes** button .

The Concurrent Merge

Two users or more may modify requirements or text, when subsequent users save their changes they must merge those changes with those of the user who saved changes while the object was open for editing.

The system displays changes, giving the opportunity to review and to decide how to resolve the changes.

To merge changes:

- 1 If **Automatic** is selected in the **Merge Status** column list box, perform one of the following steps:
 - Retain the **Automatic** selection to accept the change.
 - Select the name of the user who made the change to accept the change.
 - Select **Original** to restore the attribute to its original value.
- 2 If **Conflict** is selected in the **Merge Status** column list box, perform one of the following steps:
 - Select the name of the user whose change you want to accept.
 - Select **Original** to restore the attribute to its original value.
 - Edit the value manually in the main form so that it matches the value you want to accept.
- 3 If you want to accept all changes made by a particular user (for example, Mary or Joe), click the **Accept all changes by Mary Jones** button  or the **Accept all changes by Joseph Wilson** button .
- 4 Click **Save**.

Branching and Merging Requirements

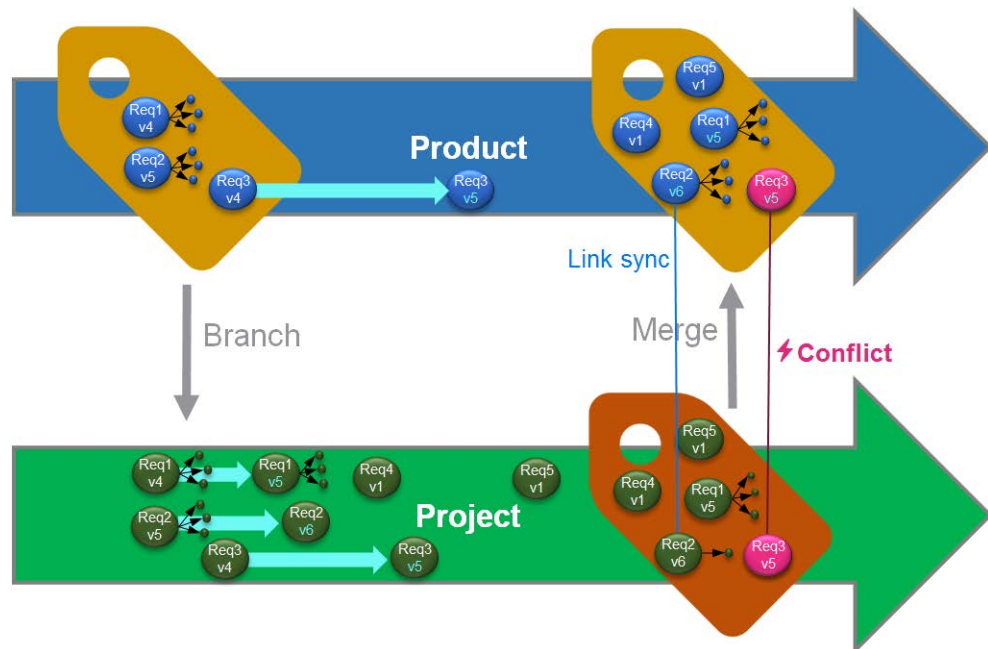
Branching and merging of requirements provides support for maintaining variants or for sharing common components.

It is often the case that multiple releases of software must be supported at the same time. Release 9, 10 and 11 may require support, and patches, while Release 12 is in development.

There are also organizations releasing complex software and hardware components used by customers producing guidance systems, the technology to power engines and to run trains. These organizations develop components that must be modified for a targeted manufacturer or model. In such organizations, there is a need to separate all that is core from modifications made to address the requirements of a customer. Components may be owned by a single engineering team, but included in a range of system releases.

In support of needs expressed by many of our own customers, Dimensions RM has developed a branching model that can support multiple products comprised of selected variant components targeted for release. Each engineering team has visibility into the base.

The following demonstrates the a product branched to a single project variant. There may be many project variants, that can be included in multiple products.



The image above shows the following scenario:

- 1 From Product, a branch (the Project) is created and assigned to the Product. The (blue) requirements Req1, Req2 and Req3 have been copied into the Project (shown as green requirements). The version number for each of the green requirements is, initially, identical with that of their blue counterparts.
- 2 In Project, the green requirements Req1, Req2 and Req3 are modified. For Req2 also the links are removed; the version numbers of the green requirements increase.
- 3 For Product, requirement Req3 is modified as well. Although both, blue and green, Req3 requirements share the version number (both are v5), they are not identical.
- 4 During the process, requirements Req4 and Req5 are created in the Project.
- 5 When merging the requirements from Project to Product, you
 - a can specify if you want to take over the new requirements Req4 and Req5;
 - b can choose if you want to remove or keep links;
 - c can choose which attribute values you want to copy from each Project requirement.

Branching requires the creation of **Product** and **Project** classes. If **Project** and **Product** do not appear on the menu when selecting **New** from the main menu bar, please check with your Instance Administrator or, if you have administration access see ["Creating Product and Project Classes for Branching"](#) on page 586.

Before a Product can be defined and populated, a Product Category must be created, see: ["Creating a New Product or Project"](#) on page 199 for details.

Creating a New Product or Project

Creating a new Product

Once the Product and Project Classes been created, they can each be used to create, populate and track entities within them.

The creation of a New Product creates a category of the same name. Sets of requirements, be they for a full system or for a single application, can be managed within these Product Categories.

To create a new product, do the following:

- 1 In the main menu bar, point to **New** and select **Product** from the drop-down menu. This opens the **New Product** dialog.
- 2 Fill the **Name** box.
- 3 If desired, specify the **Description**. The description is displayed whenever Product or Project information is displayed, including in branch target selection.
- 4 Specify the **Short Name**; this short name will be used for change identification and must be unique. A short name is created based on Product Name.



NOTE Product Class

If your administrator has not created the **Product** class, the **Short Name** attribute may not be available. If the group intends to use branching, request that a **Product** class be created following the instructions in ["Creating Product and Project Classes for Branching" on page 586](#).

- 5 It is possible to associate requirements from an existing Project to a new Product. If this new Product is being created to hold new requirements, or any objects not already associated with a Project, please proceed to #8.
- 6 If this new product is to be assigned one or more existing projects, do the following, although project assignment may be done at any time:
 - a Click **Assignment**. This opens the **Assign Project(s)** dialog.
 - b From the list of existing projects, select the project or projects to assign to this new Product.
 - c Click **OK**.
- 7 If desired, assign the project to a container. For further information on containers, see chapter ["The Containers Section" on page 165](#).
- 8 Click one of the following buttons:
 - **Save** to create the new product and close the **New Product** dialog.
 - **Save & Copy** to create the new product and retain the attribute values for creating another new product.



NOTE Populate on Copy

An attribute is copied into the next product only if the administrator selected the **Populate On Copy** option when defining the attribute. See ["Attribute Properties" on page 535](#).

- **Save & New** to create another new product, clearing the attribute values prior to its creation.

Creating a New Project

The creation of a project will create a category of the same name. Requirements created within or copied to the Project will be placed into this special category, or into a category below it.

To create a new project, do the following:

- 1 In the menu bar, click **New** and select **Project** from the menu. This opens the **New Project** dialog.
- 2 If desired, you can choose a subcategory. However, sub-categories have the following limitations:
 - A subcategory must not be a **Project** itself.
 - A project subcategory must be below the **Project** category.
- 3 Specify the **Short Name**; the short name will be appended to the PUID (Requirement ID) on branched objects; it must be unique.
- 4 If desired, specify the **Description**. The description is displayed whenever Product or Project information is displayed, including in branch target selection.
- 5 To assign products to the new project, do the following:
 - a Click **Assignment**. This opens the **Assign Product(s)** dialog.
 - b From the list, select the product or products you wish to assign to the project.
 - c Click **OK**.
- 6 If desired, assign the project to a container. For further information on containers, see chapter ["The Containers Section" on page 165](#).
- 7 **Close after save:** Select this check-box to close the project after saving it. Otherwise, the project opens for editing after you save it.
- 8 Click one of the following buttons:
 - **Save** to create the new project and close the **New Project** dialog.
 - **Save & Copy** to create the new project and retain the attribute values to populate another new project.
 - **Save & New** to create the new project and clear the attribute values prior to its population.

Editing a Product or Project

When highlighting either a **product** or a **project category**, additional icons are displayed below the main menu bar:



-  Opens the edit dialog for the selected product or project.
-  Opens the Product/Project Assignment Matrix.

The Edit Dialog

In the Product /Project Edit dialog, the description, the short name and the entity Name may be changed. Care should be taken with name changes, as it can be confusing if users have become familiar with the Product/Project structure.

Existing projects may be assigned to a product, for example, a component may be assigned for use in a new Product, or a Product may be assigned to a Project. These assignments are made in the **Assignment** section of the Edit Product / Project dialog, Click **Assignment** and the elements available will be listed.

When editing a Product, the assignment dialog will default to listing Projects; Open the drop-down to switch to the list of Products. Assignments can be made to either.

From the list, check the box next to the product or projects to be assigned and then click OK.

The Assignment Matrix

The Product/Project Assignment Matrix is intended to show the big picture in the world of Products and related Projects:

- If a product has been selected, the Product/Project Assignment Matrix shows all projects for the selected product.
- If a project has been selected, the Product/Project Assignment Matrix shows all products for the selected project.

Configuring the View

-  Exchanges columns and rows (products and projects).
- **Show all** (in **Scope** menu): Shows the assignment matrix for all products and all projects.
- **Title** or **Short Name**: Shows either the full (possibly long) name or the short name of products and projects.

Showing Shared Requirements

To open the **Shared Requirements** dialog click on the table cell intersecting **Product** and **Project** and the full list of **shared requirements** will be displayed. A filter is available at the top of each column.

Resizing the Available Label Space

Depending on the length of *Product* names or *Project* names the default space may be too small. You can resize the space labels can occupy to match your needs.

To resize the available label space, do the following:

- 1 Move the mouse pointer to the left (for rows) or top (for columns) border of the matrix. The mouse pointer turns into a double-arrow.
- 2 Keep the left mouse button pressed and move the mouse pointer to increase or decrease the available space.
- 3 Release the left mouse button when done.

Branching a Single Requirement

Requirements may be branched from a working *Project* to an existing *Product*, and from a working *Product* into a related *Project*. The branch targets listed in the Provide dialog are based on the objects location.

To branch a requirement, do the following:

- 1 Open the requirement for editing (see chapter ["Editing a Requirement" on page 122](#)).
- 2 Expand the **Used in Branches** section.
- 3 Click **Branch** to open the Branch dialog.
- 4 Select from the list displayed the Product or Project into which the object should be branched.
- 5 Click **OK**.

This branches the requirement immediately. If there are unsaved changes associated with this requirement, they will not be included in the branched version.
If unsaved changes should have been included in the newly branched object, highlight the new branch and choose Merge.

Deleting a Single Requirement from a Branch

As with objects in any category, an item that is included in a Branch can be marked as deleted in the Branch.

To mark a branched item as deleted, do the following:

- 1 Select the source requirement and click on the **Open** action (see chapter ["Editing a Requirement" on page 122](#)).
- 2 **Expand** the **Used in Branches** section.
- 3 **Highlight** the branched object.
- 4 Click **Delete Branch** to open the **Delete branch Requirement(s)** dialog. Confirmation will be requested:

Are you sure you want to delete branch the selected requirement(s)?
- 5 Click **OK** to confirm the removal of the link between the branch and the product or project.

The Current Status of the requirement will be changed to **Deleted**.



NOTE Deleted Object

If you add the requirement back into the project or product from which it was deleted, the requirement will be undeleted and the link restored.

The Branch View

The **Branch View** dialog allows users to **Branch** multiple requirements from a selected class or container to a Target, as well as to **use Delete** to mark branched requirements as Deleted.

Selected requirements may also be **Merged** from the Branch View, although merging multiple requirements or containers is most effectively done using the **Merge View**.

To open Branch View, do the following:

- 1 Select **Branch View** from the Views menu.
- 2 The Branch View is a two-sided dialog:
 - The left-hand** side is used to list the **Documents, Categories**, or the **Classes** available for selection from the **Source** Product or Project
 - The right-hand** side lists targets available based on the Source.
- 3 The method of selection from source to target may include:
 - Category:** Branch all objects contained in a selected category
 - Document:** Branch all objects contained in a selected Document
 - Class:** Items highlighted from a class or collected using class filters
- 4 To Branch from a **Category** see: ["Branching All Requirements in a Category" on page 204](#)
- 5 To Branch a **Document and Document Content** see: ["Branching from a Document" on page 204](#)
- 6 To Branch selected requirements from a class see: ["Branching Selected Requirements from a Class" on page 203](#)

It is also possible to synchronize branched requirements using the **Branch View**, see ["Accessing Merge from the Branch View" on page 207](#).

For merging multiple requirements, categories, or documents, the Synchronize View is recommended (see ["Merging Branches" on page 205](#)).

Branching Selected Requirements from a Class

One or more requirements can be selected from the list on the left and branched to a selected target using the button above the target list.

- 1 In the menu bar, point to Views and select Branch View from the menu.

- 2 From the **Source** box, select the *Product* or *Project* from which to branch requirements.
- 3 Expand the **Class** section.
- 4 Select the Class, Quick Search style filtering may be applied
- 5 Highlight the objects to be branched
- 6 From the Target select the product(s) or project(s) to receive the provided requirements.
- 7 Click **Provide**. The selected objects, with associated links will be displayed for review.
- 8 Review and if acceptable, click **OK**.

Highlighting a single branched requirement from the list on the left, will display additional information on the right:

 The selected requirement has been branched. Note that the arrow is directional; indicating a branch down from a product or up from project to Product.

 The selected requirement or the branched requirement has been modified.

Delete Branch is available from Branch View to change the status of branched items to Deleted.

Branching All Requirements in a Category

- 1 In the menu bar, point to **Views** and select **Branch View** from the menu.
- 2 From the **Source** box, select the *Product* or *Project* from which you want to branch requirements.
- 3 Expand the **Category** section.
- 4 Select the desired category.
- 5 Click **Branch**. This opens the *Branch Category Content* dialog.
- 6 Select the target product(s) or project(s) to receive the branched requirements.
- 7 To maintain links to other requirements, ensure that the **Branch with Links option** is selected.
- 8 To create subcategories in the target, ensure that the **Create Subcategories** box is checked.
- 9 Click **OK**.

Branching from a Document

All requirements contained in a document, including the document itself, can be branched from **Branch View** or **Home View**

To branch all requirements contained in a document from Branch View:

- 1 In the menu bar, point to Views and select **Branch View** from the menu.

- 2 From the **Source** box, select the *Product* or *Project* in which the document is contained.
- 3 Expand the **Documents** section.
- 4 Select the desired document.
- 5 Click **Branch**. This opens the *Branch Category Content* dialog.
- 6 Select the target product(s) or project(s) for the provided requirements.
- 7 If you want to keep links to other requirements, ensure that the **Branch with Links option** is selected.
- 8 Click OK.

To branch all requirements contained in a document, from Home:

- 1 From Home View select the **Documents** tab.
- 2 Select the category in which the document resides.
- 3 Select the desired document.
- 4 From the Actions pane, under Documents select **Branch**.
- 5 From the dialog: '*Branch Document Content to Project*' select the Target.
- 6 If the Instance Administrator has chosen to enable **Branch with Links** (see ["Branch Merge Settings" on page 92](#)) this box is checked by default, uncheck this box if links should not be included.
- 7 Click **OK**.

Merging Branches

Merging changes made in branched objects can be accomplished in one of the following methods:

- A single requirement can be merged from the **Edit Attributes Dialog**, see ["Accessing Merge from the Edit Attributes Dialog" on page 206](#),
- Branched projects or containers can be listed, reviewed and merged **individually** from the **Branch View**, see ["Accessing Merge from the Branch View" on page 207](#).
- Reviewing and merging multiple requirements, including a complete Product or Project is most effectively done using ["The Dialog from Merge View" on page 205](#).

The Dialog from Merge View

- 1 In the menu bar, point to **Views** and select **Merge View** from the menu.
- 2 From the **Source** box, select the *Product* or *Project* for which you want to merge requirements.
- 3 From the **Target** box, select the *Project* or *Product*. The entries listed for selection will depend on your choice for **Source**.

- 4 After selecting both Source and Target, the content is compared. The center column lists change type, clicking the type will open a dialog showing detail of changes in source, target or both.

When selecting and merging multiple requirements, all custom attributes (those editable by users) as well as Workflow State can be accepted.

 - **Conflicted** - The set of requirements modified in both **Source** and **Target**. These can be reviewed, for physically conflicting changes (e.g., both sides changing the description), conflicts can be mitigated and the **Apply Changes** button clicked to complete the merge.
 - **New** - Requirements added to either **Source** or Target, with details listed and an arrow indicating its ability to be included on both sides.
 - **Modified** - Requirements modified in either **Source** or Target, with an arrow indicating its ability to be included in both.
 - **Deleted** - Requirements deleted in either Source or Target; the deleted object will be displayed with strike through.
 - **Unchanged** - No change in **Source** or **Target**.
- 5 Click on **Show Details** to display change details for selected attributes (see "[Branch Merge Settings](#)" on page 92). **Hide Details**, will suppress highlighted change.
- 6 You may choose to merge selectively or merge all changes made in the target to the source or the source to the target using one of the following:
 - Click directional arrows < or > to select a single requirement for merging. The arrows indicate that the requirements will be synchronized to right or left, the changes are not applied until the **Apply Changes** button is selected.
 - Click << or >> to select all requirements for merging. The arrows indicate that the requirements will be synchronized to right or left. once selected the individual directional arrows change color.
 - The selection may be limited by type, highlight one or more boxes to list only New, Modified, Deleted, **Conflicted**, or **Unchanged**.
- 7 Once changes have been reviewed Click **Apply Changes**. This synchronizes all selected changes.

Accessing Merge from the Edit Attributes Dialog

- 1 Open the requirement for editing (see chapter "[Editing a Requirement](#)" on page 122).
- 2 Expand the **Used in Branches** section.
- 3 Highlight the object whose changes should be merged.
- 4 Click **Merge** to open the **Merge** dialog.
- 5 On top of the **Merge** dialog, you can choose from these options, please note that it is possible to merge a branched requirement into the source, or merge source changes into the branch:
 - a **Apply changes to <REQUIREMENT_ID> (source)**: This copies all attribute values from the *source to the target*.
 - b **Apply changes to <REQUIREMENT_ID>.<SHORT_NAME> (provided)**: This copies all attribute values from the *branched object into the source*.

- c Ignore changes: This disables all attributes.
- 6 Next to attribute names, you might see . This means that this attribute is disabled and will not be merged. Ignored attributes can be enabled by clicking .
- 7 An enabled value may show an arrow next to the attribute name. Clicking toggles between the following options for the attribute:
 - Apply changes to `<REQUIREMENT_ID>` (source)
 - Apply changes to `<REQUIREMENT_ID>.<SHORT_NAME>` (provided)
 - Ignore changes
- 8 Click **OK** to apply changes.

Accessing Merge from the Branch View

- 1 In the menu bar, point to **Views** and select **Branch View**
- 2 From the **Source** box, select the *Product* or *Project* for which you want to merge a requirement.
- 3 To display requirements contained in the Source, choose the Class to list requirements. Filters may be applied to assist in the search, see ["Quick Search Filtering" on page 185](#).
- 4 Click Search
- 5 On the right are listed Products or Projects containing requirements branched from the Source.
- 6 Highlighting a requirement on the left will display status information.
 -  The selected requirement has been branched.
 -  The selected requirement has been modified, in source or in branch.
- 7 Select the relevant branch.
- 8 Click Merge to open the Merge dialog.
- 9 The following options are listed:
 - a **Apply changes to `<REQUIREMENT_ID>` (source)**: This copies all attribute values from the *source* to the *target*.
 - b **Apply changes to `<REQUIREMENT_ID>.<SHORT_NAME>` (provided)**: This copies all attribute values from the *branched object* into the *source*.
 - c Ignore changes: This disables all attributes.
- 10 Next to attribute names, you might see . This means that this attribute is disabled and will not be synchronized. You can enable these attributes by clicking .
- 11 An enabled value may show an arrow next to the attribute name. Clicking toggles between the following options for the attribute:
 - Apply changes to `<REQUIREMENT_ID>` (source)
 - Apply changes to `<REQUIREMENT_ID>.<SHORT_NAME>` (provided)
 - Ignore changes

- 12 Click **OK**. The selected changes are applied.

NLP Complexity Analysis

Natural Language Processing, as implemented in Dimensions RM, is based on the Flesch-Kincaid readability tests. Warnings or errors may be raised based on the complexity of a text attribute.

This functionality must be implemented by the System Administrator and, once implemented, may then be activated in any database instance. For implementation instructions, see ["Configuring NLP Complexity Analysis" on page 674](#).

Many customers implement special functions like complexity and similarity analysis in a test environment, or a test instance, allowing users to try things out and to judge for themselves the benefit it will bring to their own processes.

To Activate and Apply Complexity Analysis:

NLP complexity analysis is disabled by default. The setting may be modified from the RM Browser, -->Administration menu by the Instance Administrator:

- 1 Administration-->Instance Settings
- 2 Choose the Requirements tab, and scroll down to **Complexity Analysis**.



Complexity Analysis

☐ Disabled

☒ Warning

☐ Error

Allowed Complexity: 57/120 High Low  Settings per Class...

When the option is set to **Warning** a yellow exclamation is raised on the Edit Requirement form when saving the requirement.

When the option is set to **Error** the yellow exclamation is raised and the user will not be able to save the requirement until the statement is reworked to meet an acceptable level of complexity.

The level of complexity allowed is established through the use of the slider. The higher the bar is set, the less likely to raise a warning. The message reports the complexity level based on the current settings.

Selecting the **Settings per Class** button allows the administrator to set complexity warnings based on class. This allows the analysis to be applied to attributes in classes expected to reach a higher level of complexity.

Select Class:

Business_Requirement

☒ Enabled

Select Attribute:

Description

☒ Enabled

Allowed Complexity: 50/120 High Low

Save Close

NLP Similarity Analysis

Natural Language processes designed to analyze sentence similarity or semantic textual similarity provides a measure of how similar two pieces of text are, or to what degree they express the same meaning.

This functionality must be implemented by the System Administrator and, once implemented, may then be activated in any database instance. For implementation instructions see ["Configuring NLP Similarity Analysis" on page 674](#).

Many customers implement new functionality in a test environment, or a test instance, allowing users to try things out and to judge for themselves the benefit it will bring to their own processes.

To Activate Similarity Analysis

From the RM Browser, Administration menu:

- 1 Administration-->Instance Settings
- 2 Choose the Requirements tab, and scroll down to **Similarity Analysis**.
- 3 Check the box to the left of 'Enabled'.

Once Activated, requirements may be checked for similarity from the Edit Requirements dialog by selecting the 'Find Similar' icon.

Chapter 4

Working with Documents

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About Documents

Documents are containers. In addition to holding objects from any class, Documents provide structure. Templates can be defined, populated with chapters and standard free-form text saved and then used as a basis for maintaining requirements associated with a release, a test plan, or a set of customer needs. Templates for the Systems Requirement Document (SRS) or the Stakeholder review can be defined, populated and reused from release to release.

- Documents can be exported to Word, PDF, ReqIF, or Excel, see ["Exporting Documents" on page 287](#).
- Documents can be baselined, and used for comparison, see ["Comparing Documents and Snapshots" on page 284](#)
- Documents, like Requirement objects, can be followed using the **Follow** action.
 - Should users wish to be notified of changes to a document they may:
 - a Open the **Home** View.
 - b Select the **Documents** tab.
 - c Highlight the relevant document.
 - d Select the **Follow** action from the Documents set on the Actions pane.

The following sections describe methods for opening, managing and saving existing documents. For details concerning Document Creation, please see ["Document Creation and Maintenance" on page 230](#).

Section	Description
Opening Documents or Snapshots	Details for opening an active (modifiable) document, or an immutable document copy.
Document Actions	The right pane of the open document lists Document Related Actions.
Navigation Pane	The left pane of the open document is the navigation pane; it holds the Table of Contents. This section describes the features available and defines the icons used in the left pane.
Detail Pane	The center pane of the open document holds the content, the chapters, free form text and the requirements included. This section describes the features available and defines the icons used in the center pane.
Reviewing Recent Document Changes	Icons in the toolbar indicate changes introduced since the last time you opened the document.
Document Filtering	With document filtering, the user can limit the objects included in the display using a simple text search or a saved filter. For users responsible for reviewing assigned requirements, this can simplify the task.
Requirement Layouts	Choose the display for the requirements within the document: Paragraph, Grid or Editable Grid.

Section	Description
Document Modes	Choose your approach to reviewing and editing a document: one chapter at a time, or choose entire document mode.
Finding and Replacing Character Strings	Within an open document, find and replace strings in chapters and/or requirements.

Opening Documents or Snapshots

Documents and Snapshots are listed under the Documents Tab in the **Home View**. When the document is opened, the user is working, adding and editing within the document. Chapters can be added, free form text added or changed, and requirements added or edited.

Permissions are controlled through groups assigned through the categories pane. Depending on how access permissions are assigned, it is a possibility that a given user will not have read access to all requirements in a document, see [No Permission to View one or more Objects](#).

To open a document:

- 1 Open the **Home View**.
- 2 Select the **Documents** tab.
- 3 Like all objects managed in RM the documents may be stored in Categories, select the appropriate category.
- 4 Select the document, and click on Open from the Documents set in the Actions pane, or double-click the document name to open the document.

To open a snapshot (A frozen version of the document content (requirements and text):

- 1 Open the Home View, and select the **Documents** tab.
- 2 Snapshots are stored below the documents from which they were created. Locate the working document and click expand.
- 3 Select the snapshot, and click on Open from the Documents set in the Actions pane, or double-click the snapshot name to open in document view.

To open the currently open document/snapshot in a new window:

- 1 Click **Open in New Window** from the Documents group in the Actions pane.
- 2 The document or snapshot opens in a new browser window.

No Permission to View one or more Objects

If this icon  is displayed in the open document or the following message raised when opening a document then the current user does not have read access to all document objects:

Warning you do not have permission to view one or more objects in this document. Those objects are not displayed.

This means that there are requirements in the document that belong to:

- a Class to which you do not have read permission,
- a Category to which you do not have read permission, or
- a category which has been Deactivated.

Chapters or subchapters containing hidden objects are shown with a warning symbol:

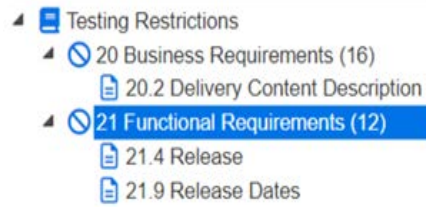


Figure 4-1. The warning indicates no read access on object(s) within the section.

To see a count of the unavailable objects you may change a setting:

Document Settings-->Format Document-->Document Tree and select 'Show count of assigned Requirements in chapters title'.

If the issue is permissions, you may speak to your Team Lead or Instance Administrator.

If the issue is that the Category containing those objects has been deactivated, you may acquire read-only access to deactivated categories "[• Categories: Show Inactive Categories](#)" on page 71.

Document Actions

Available Actions depend on process and settings. If there is an Action to which you have no access, please check with you Instance Administrator.

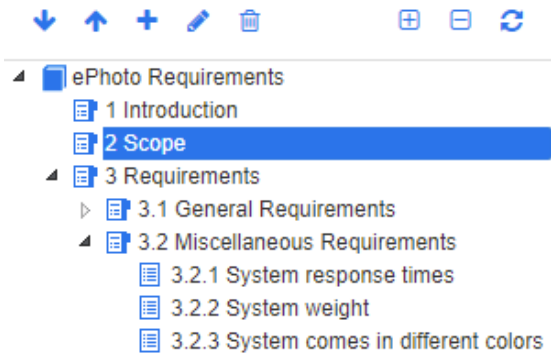
Action	Description
Open	From Home View, Documents tab, select and open a document (" Opening Documents or Snapshots " on page 213).
Create from Template	Create a new document based on the selected template (" Creating a New Document " on page 232).
Show in Split View	Open the selected document in Split View (" Linking Existing Requirements through Split View " on page 151). Once the document is displayed in Split View, you may return to the open document. Hover over the document root chapter, the tool tip <i>Go To Document</i> will be raised, click and return.
Document Settings	Access Document Settings for the selected document (" Document Formats and Views " on page 242).
Views	Create a named and reusable document format using Format Document (Formatting Documents) and Display Options (Display Options Tab).
Save As	Save a copy of the selected document with a new name (" Saving a Copy of a Document Under a New Name " on page 241).

Action	Description
Export	Select a document from Home View, Documents tab, or from an Open document, select the Export action ("Exporting Documents" on page 287).
Export History	Displays the status of a document exported in background ("Exporting Documents" on page 287).
Create Snapshot	Create a read-only copy of a document. Select a document from Home View, Documents tab, or from an Open document, click the Create Snapshot action.
Create Parent Collection	Parent collections include all objects from multiple containers ("Creating a Parent Collection" on page 377).
Branch	Branch the contents of a document in a single action ("Branching from a Document" on page 204).
Delete	Documents may be marked as deleted, and therefore hidden from the standard list ("Using Workflows with Documents" on page 238).
Show Deleted Documents	Include Deleted Documents in the list on the Document Tab.
Undelete	Undelete a Deleted document ("Undeleting a Document" on page 241).
Remove	Permanently Remove a document ("Removing a Document" on page 241).
Compare Documents	Compare selected documents and/or snapshots ("Comparing Documents and Snapshots" on page 284).
Create Direct URL	Capture the export URL of a document ("Copying the URL of a Document to the Clipboard" on page 226).
Lock	A user may lock a document, ensure that no other user may access the document until it is Unlocked. See "Collaborative Document Editing" on page 254 .
Unlock	Unlock a previously locked document. An Administrator may Unlock a document that a user has mistakenly left locked, see Managing Document Locks).
 Generate Titles	Generate missing titles based on your requirement statements ("Generating Requirement Titles" on page 194).
 Analyze Gaps	Enabling gap analysis using AI increases the integrity of the requirements defined. The feature will Analyze, Identify and Propose requirements that may close the gaps, leaving it to the analyst to consider the requirements proposed to fill the gaps ("Applying Analyze Gaps" on page 229).
 Link	Use AI to propose links in document split view.

Action	Description
 Find Conflicts	Apply AI to the identification of inconsistencies between requirements within the selected document (" Finding Document Conflicts " on page 228).
 Autocomplete	Suggest that AI provide ideas about what might come next (" AI Autocomplete " on page 230).
Follow	Select the Follow Action to be notified of Document Changes (" Notification of Change with the Follow Action " on page 107).
Unfollow	To Unfollow (" Notification of Change with the Follow Action " on page 107).

Navigation Pane

The left pane in an open document appears as a Table of Contents:



The icons above and beside elements indicate the following:

- 
- Down/Up:** These buttons move the selected chapter or requirement down or up in the document's structure.
- 
- New chapter:** This button invokes the New Chapter. dialog. The new chapter will be placed at the same level as the currently selected chapter, unless:

- The **Add as subchapter** checkbox is enabled or
- The **root (Document Name)** of the document is selected.

See "[Creating a New Chapter](#)" on page 255.

- 
- Edit chapter:** The **Edit Chapter** dialog allows changes to the chapter title, content or formatting. See "[Editing a Chapter](#)" on page 258 and "[Formatting Chapters](#)" on page 261.
- 
- Delete chapter:** This button deletes the currently selected chapter. To complete the operation, click **OK** on the resulting confirmation dialog. See "[Deleting a Chapter](#)" on page 259.
- 
- Expand all chapters:** This button expands all chapters in the document tree.
- 
- Collapse all chapters:** This button collapses all sub-chapters, leaving only the root-chapters visible.



Reload this document: This button retrieves the currently open document from the server and reloads it into the work page.



Root: This is the root level (Title) of the document.



Chapter: This marks a chapter in the document.



Automatic Refresh: The contents of this chapter is based on a **report**. The content is updated automatically when the document is opened or refreshed.

Note: Any changes (e.g. adding or removing requirements) made within the document will be reverted when the chapter is refreshed.



Requirement: This is a requirement in the document.



Requirement with CR: This requirement is in a "Proposed" state; the change has not yet been accepted.



Suspect Link: Indicates that the requirement is under suspicion. Click the suspect icon in the detail pane to see the reason, see [Suspect Links](#) for additional detail.



No Permission: This symbol indicates that there are requirements in the chapter to which the user has no read permission; the requirements cannot be listed.

See [Navigation Pane](#) for details.

Note the following functional aspects of the Navigation pane:

Chapters and requirements are automatically numbered using a hierarchical outline format. This numbering updates whenever a change is applied to the structure or order of the document's contents.

To make a requirement a sub-requirement of a requirement, select the requirement's name and drag it to the parent requirement.

To make a chapter a subchapter of another chapter, select the chapter and drag it to the parent chapter.

The attributes displayed in the Navigation pane can be modified using ["Display Options Tab" on page 247](#).

The PUID of each requirement is displayed, by default, as a tooltip when you hover over the requirement in the Navigation pane. This can be modified using ["Display Options Tab" on page 247](#).

The element selected in the Navigation pane will be displayed in the Detail pane.

Detail Pane

Document Content can be displayed for review and modification in one of two viewing modes:



Chapter Content: This mode allows users to limit the view to individual chapters. Free form chapter text and requirements can be modified using this view. See ["Document Modes" on page 222](#)



Entire Document: This mode allows users to scroll through an entire document, making changes to free form text and requirements. Users may switch between viewing modes. See ["Document Modes" on page 222](#)

The look of the Detail pane depends on the View, the layout, the element selected in the Navigation pane, as well as the format settings in effect at the document and chapter levels. Many things to consider, but like most configurable tools, users find the look that best meets their needs and they stick with it.

If the selected chapter or document root contains:

Only requirements: the content can be displayed using either the Grid or Paragraph layouts. The user can switch between the layouts or modify the default layout applied to each chapter or the entire document.

Chapter Text is displayed using paragraph layout. The requirements within the chapter may be displayed in any of the modes listed below.

Chapters can be viewed in these modes:

Grid View: Shows the requirements in table format.

In Grid view requirements from different classes contained within the same chapter are, by the nature of their content, displayed in separate tables.

Editable Grid View: Shows the requirements in table format. In this mode users can edit the displayed attributes without opening the Edit dialog.

Paragraph: Requirements are displayed individually.

In **Chapter Content** view, users can switch between **Paragraph**, **Grid** and **Editable Grid** Layout by selecting the desired layout:

Layout: [Editable Grid](#) | [Grid](#) | [Paragraph](#)

In **Entire Document mode** the switch between layouts must be made in Document Settings, see ["Formatting Documents" on page 245](#).

The following lists Detail Pane Icons (excluding those associated with Document Filtering):



▼ Save document changes or select checkbox to initiate auto save.



Disable Inline Editing select this icon to disallow inline change during review, comments may be created. The object, chapter text or requirement, must be opened in edit mode to introduce change.



▼ **Select/Deselect** all requirements in the document in order to execute permitted Actions such as "Add to Collection".



No changes: The document has not changed since the last visit.

 **Changed:** The document changed since the last visit. Clicking the **Changed** bulb lists recent changes. For further information on document changes, see chapter ["Reviewing Recent Document Changes" on page 219](#).

✓ **Verify Quality:** Verify the quality of the requirements in the document. For details see ["Verifying Document Quality" on page 227](#).

 **Scan for glossary entries:** Scans the text for glossary entries. Depending on the mode selected, clicking this icon scans either the selected chapter or the entire document. Note, that this function is only available if your administrator created the Glossary class, see ["Using the Document Glossary" on page 64](#).

 **Following/View Followers:** Color indicates that the current user has chosen to **Follow** this document. Click the icon to view all users actively following the document. To cancel the follow click the icon and click **Unfollow**.

 **View Followers:** Click the icon to view all users actively following the document. To Follow the document, click the icon and click **Follow**.

 **Distribution Graph:** Click the icon to view the object distribution among classes and/or workflow.

 **Chapter Content Mode:** One of two possible modes for reviewing or editing a document. The icon indicates the document is scrollable, one chapter at a time. Clicking this icon changes the mode to allow scrolling through the Entire Document. See ["Document Modes" on page 222](#).

 **Entire Document Mode:** One of two possible modes for reviewing or editing a document. The Entire Document mode allows users to scroll through the whole document. See ["Document Modes" on page 222](#).

 **Find and replace:** This button invokes the **Find and Replace in Document** dialog. See ["Merging Concurrent Document Changes" on page 254](#).

 **Print:** This button invokes your system's Print dialog.

In **Chapter Content View**, the Chapter selected in the Navigation pane is printed.

In **Entire Document View**, the document is printed.

 **Refresh:** This button repopulates the Detail pane with fresh data from the database.

Reviewing Recent Document Changes

When opening a document that has been modified since the last visit, a message shows that the document has changed. The changes made by other users within the document, as well as change made to requirements outside of the document are listed.

In the toolbar of the detail pane the  icon indicates that there are changes, while the  icon indicates that no new changes have been made.

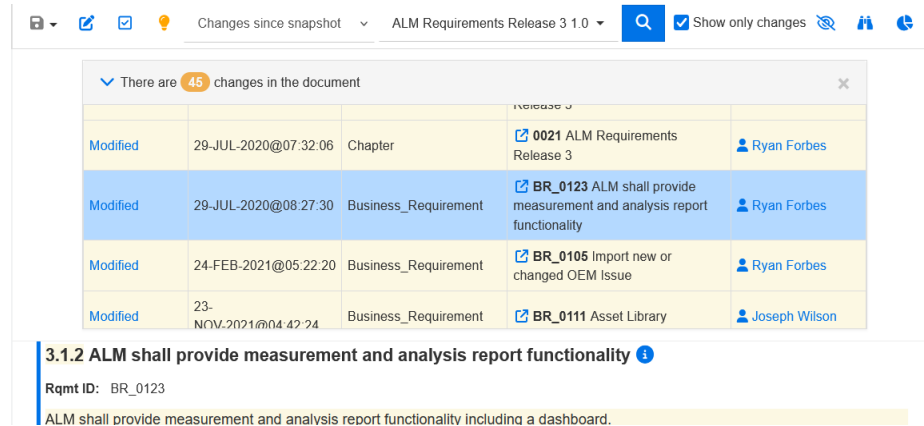
Clicking the  icon provides access to a **Drop-down list** with the following options:

Recent changes: Show the changes made by other users since you last opened the document. This is the default.

Changes since date: Shows a date selector, which allows you to choose a date.

Changes since snapshot: Shows a drop-down list with all snapshots of this document along with the date the snapshot was created.

 : Refreshes the display based on the selected option. For example, listing all document changes made since the last snapshot.



Modified	Timestamp	Type	Description	User
Modified	29-JUL-2020@07:32:06	Chapter	0021 ALM Requirements Release 3	Ryan Forbes
Modified	29-JUL-2020@08:27:30	Business_Requirement	BR_0123 ALM shall provide measurement and analysis report functionality	Ryan Forbes
Modified	24-FEB-2021@05:22:20	Business_Requirement	BR_0105 Import new or changed OEM Issue	Ryan Forbes
Modified	23-NOV-2021@04:42:24	Business_Requirement	BR_0111 Asset Library	Joseph Wilson

3.1.2 ALM shall provide measurement and analysis report functionality ⓘ

Rqmt ID: BR_0123

ALM shall provide measurement and analysis report functionality including a dashboard.

Figure 4-2. Listing Changes Since the Last Snapshot

Include parent changes option:

This option is available in child documents. When selected, changes in the parent document are also shown. See ["Parent and Child Documents"](#) on page 231.

Show only changes option:

Updates the document tree to show only the changed chapters, requirements, or change requests along with the parent chapters or requirements.

Following the search, all changes are included in a table.

To filter the contents of the table, enter text into one or several boxes on the first line of the table.

The modified chapter or requirement can be opened by clicking the related entry in the table.

Note that the modified chapters and requirements are highlighted in the document navigation pane.

In the document detail, changed objects are displayed with the ⓘ symbol.

Changes will be indicated for each displayed attribute.

Deleted values are shown with strike-through and colored red.

The ⓘ symbol changes to ⓘ once the difference is displayed.

To return to the current attribute values, click ⓘ

Document Filtering

Enter a text string in the search box, and click  to limit the display to those objects, requirements or chapter text, containing the string.

• **Options:** Click **Options** to further refine the search:

Use **Limit Search to:** to limit the range of the search string to **PUID** (Rqmt. ID) **Title** and/or **Description**, rather than searching the all attributes.

Check Include Chapters to include in the display, for context, the chapter title along with with matching objects.

Check Show Context in **Entire Document View** to include chapter and/or sub-chapter headers to provide context to requirements matching the search.

- **Saved Filters** may be accessed by clicking the drop-down to the right of the .

A filter created in **Quick Search** may be applied to documents, with or without additional edits.

For a description of the **Quick Search** functionality discussed below see ["Quick Search Filtering" on page 185](#).

- 1 To Edit the a Quick Search Filter from within a document:

Use the Pencil icon to raise the **Edit Filter** dialog (to see the image in [Figure 4-3](#)).

Edit an existing filter and save it with a new name.

Edit an existing filter and save it with the same name, the saved edits will be applied to the filter in **Quick Search**.

- 2 To create a new filter:

Clear the filter selection (select None) and click on the pencil; this will raise the **New Filter** dialog.

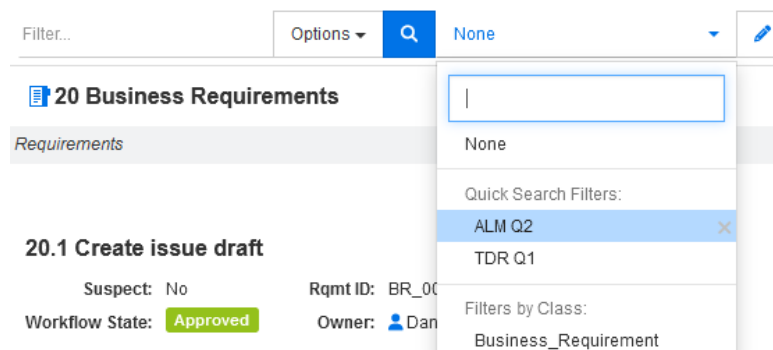


Figure 4-3. From the Document View, choose filter from those saved

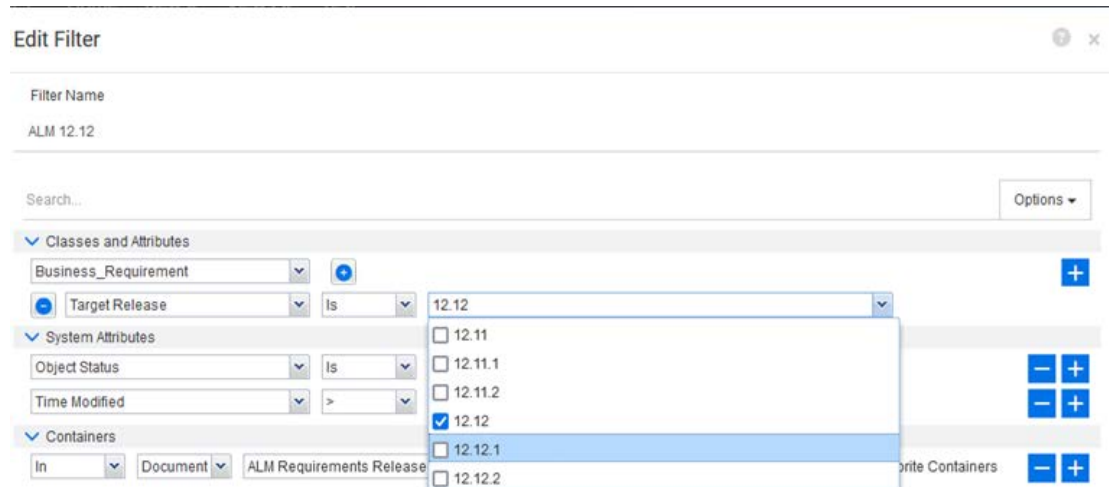


Figure 4-4. Edit Filter dialog.

Requirement Layouts

The layout of requirements in a document displayed in **Chapter Content View** can be switched freely between the following layouts. The layout applied in **Entire Document View** is determined by the Requirement Layout setting in ["Formatting Documents" on page 245](#).

Grid View: Shows the requirements in table format. Objects must be selected and opened before they can be edited.

Editable Grid View: Shows the requirements in table format. In this mode users can edit the displayed attributes without opening the Edit dialog.

Paragraph: Requirements are displayed individually.

The attributes included in the display of requirements in each of the layouts is determined by those selected in the ["Display Options Tab" on page 247](#).

Document Modes

For documents, there are two modes available for scrolling through document content: Chapter and Entire Document Mode. The Document View Mode can be changed either through Instance Setting/User Setting (see chapter ["Default Document View Mode" on page 85](#)) or by clicking  or  in the Detail Pane (see chapter ["Detail Pane" on page 218](#)).

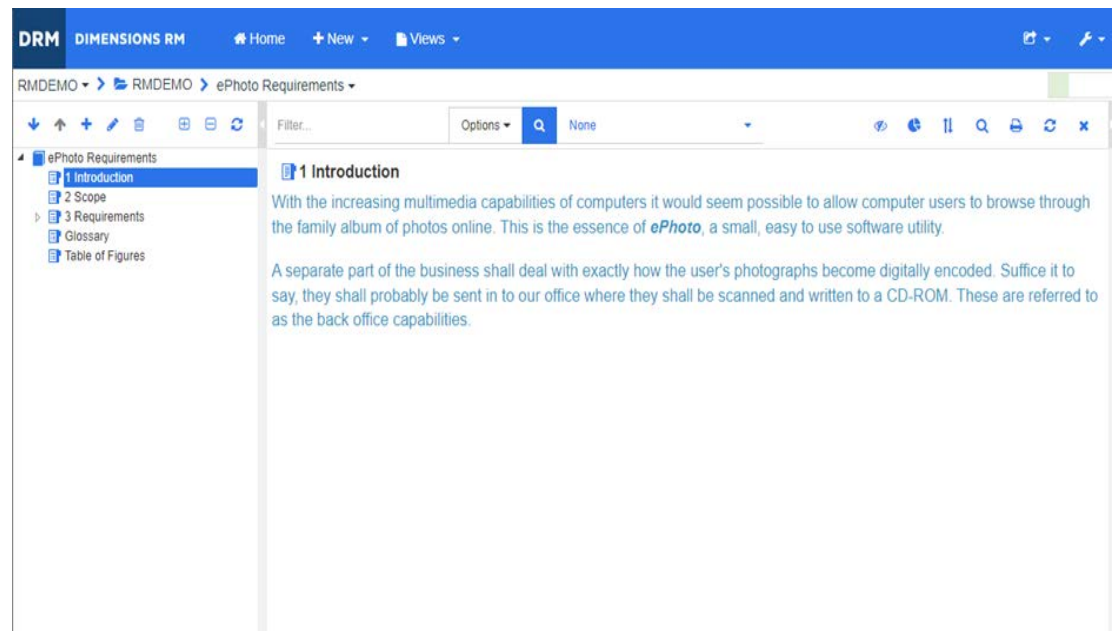


Figure 4-5. Document Mode: Chapter

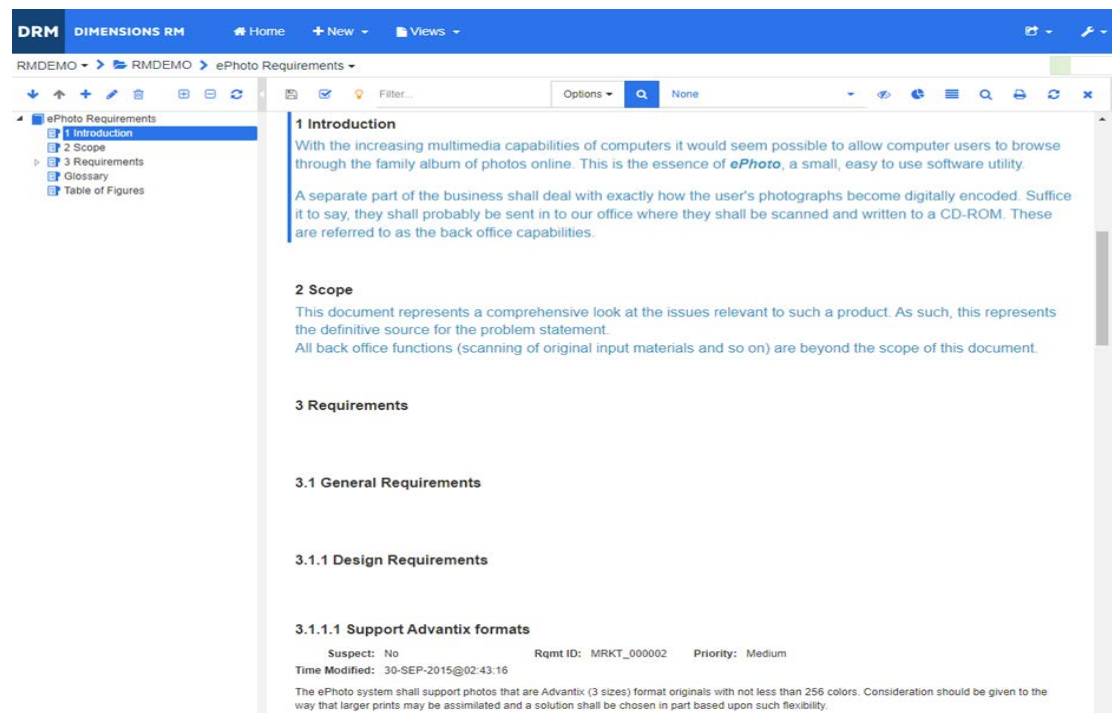


Figure 4-6. Document Mode: Entire Document (Standard Mode)

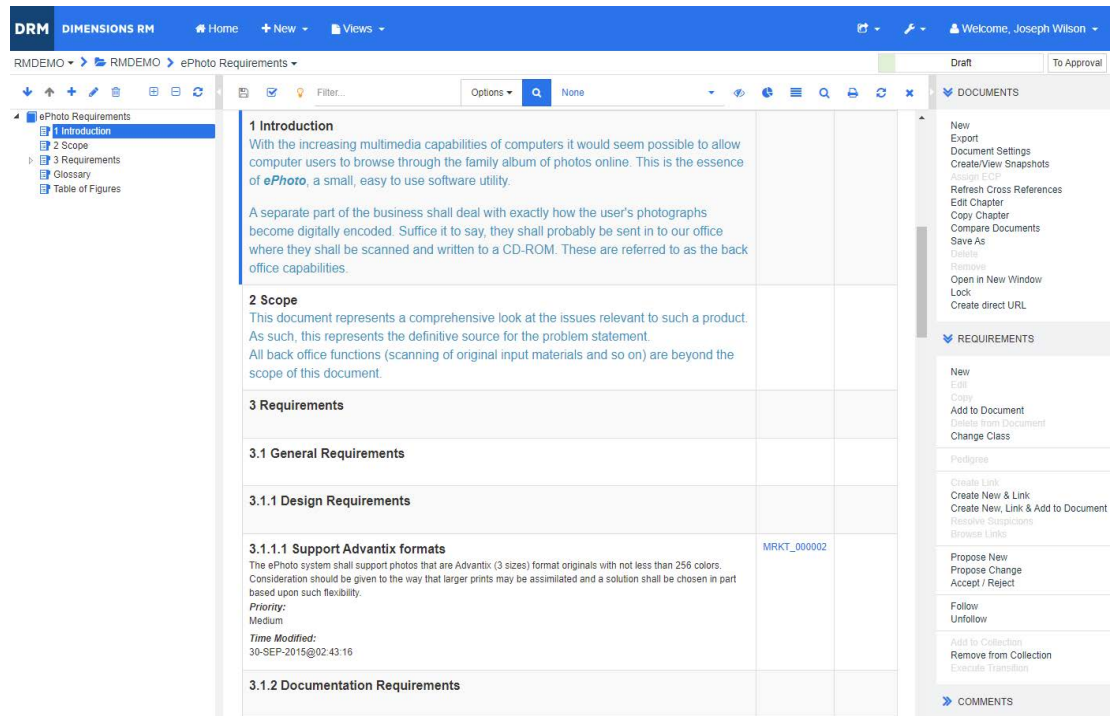


Figure 4-7. Document Mode: Entire Document (Compact Mode)

Finding and Replacing Character Strings

You can find and replace character strings in chapters and requirements in an open document. You can find and replace character strings in the following:

- An entire document or a selected chapter
- Title and Description attributes or all alphanumeric, list or user attributes



NOTE About Find and Replace

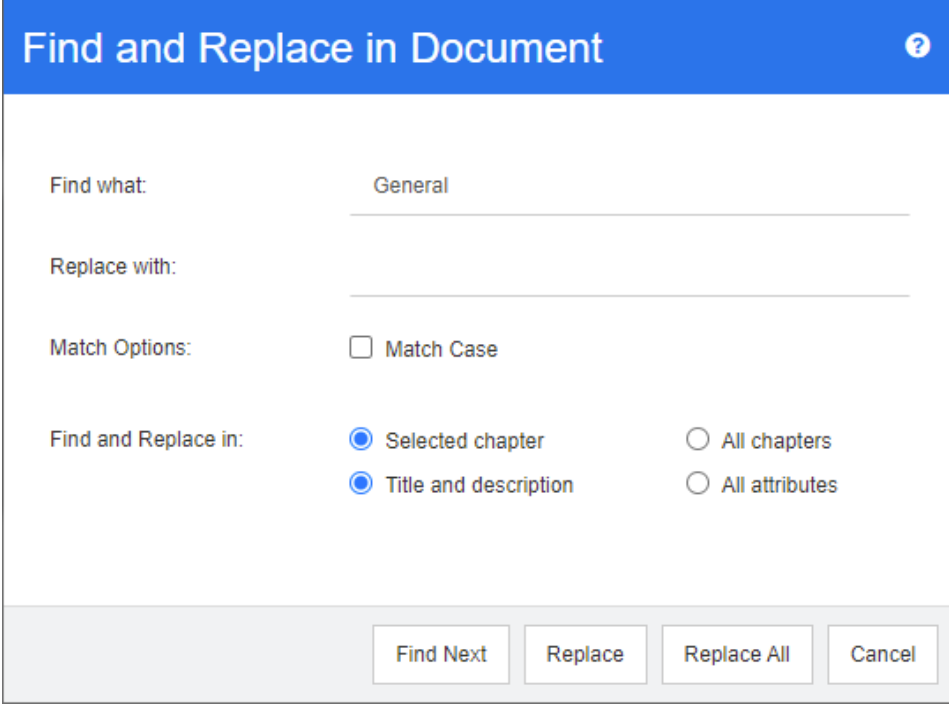
The **Find and Replace** menu item is disabled while comparing a document and its snapshot (see ["Comparing Documents and Snapshots" on page 284](#)).

For read-only objects (snapshots and ECP-controlled documents without an ECP assigned), the **Replace** and **Replace All** buttons are not available. For these objects, **Search** must be used.

To use the **Replace** and **Replace All** commands, you must have permission to replace a requirement or chapter. If you only have permission to change a subset of the objects selected, a message is raised.

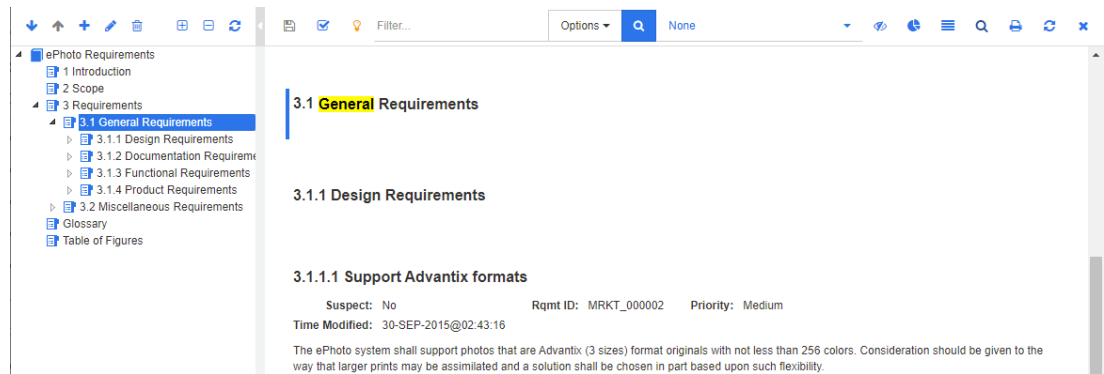
To find and replace character strings:

- 1 Open the document, for details see ["Opening Documents or Snapshots" on page 213](#).
- 2 To limit the search to a specific chapter, select it in the Navigation pane.
- 3 Click the **Find and replace** () button. The Find and Replace dialog opens.



The image shows a 'Find and Replace in Document' dialog box. It has a blue header bar with the title and a help icon. Below the header, there are four main sections: 'Find what:' with a text input field containing 'General'; 'Replace with:' with an empty text input field; 'Match Options:' with a 'Match Case' checkbox; and 'Find and Replace in:' with four radio button options: 'Selected chapter', 'All chapters', 'Title and description', and 'All attributes'. At the bottom, there are four buttons: 'Find Next', 'Replace', 'Replace All', and 'Cancel'.

- 4 Find what:** Enter the string you want to find.
- 5 Replace with:** If you want to replace the string, enter the replacement string here.
- 6 Match case:** Enable this check box to include the case of the string in the match criteria.
- 7** Select one of the following:
 - Selected chapter:** To search only the selected chapter and any subchapters and requirements it contains.
 - All chapters:** To search all chapters and their contents.
- 8** Select one of the following:
 - Title and description:** To search only Title and Description attributes.
 - All attributes:** To search all alphanumeric, list and user attributes.
- 9** Click any of the following buttons:
 - Find Next:** This button displays the first chapter or requirement containing one or more instances of the string. The chapter or requirement is selected in the Navigation pane, and the found string is highlighted in the Detail pane. To display the next match, click the button again.



Replace: The chapter or requirement that is currently selected is replaced, and the new version contains the string you specified in the **Replace with** box.

Replace All: This button replaces all chapters and requirements containing the string you specified in the **Find what** field with the string you specified in the **Replace with** field.

The Find and Replace dialog closes, and a *"Replacing all strings"* message is displayed. After this operation finishes, a dialog displays how many chapters and requirements were replaced and reports any errors.

Moving a Document or Snapshot to a different Category

To move a document to a different category, do the following:

- 1 Open the Home View, and Select the **Documents** tab.
Snapshots are stored below the documents from which they were created. Locate the working document and expand the set.
- 2 Select the relevant Document or Snapshot.
- 3 Drag the selected item and drop it onto the desired category in the **Categories** tree.

Copying the URL of a Document to the Clipboard

You can copy the URL of a document or snapshot and paste it into a file for future use and reference. When that URL is later invoked, it will open RM Browser to that document or snapshot.

To copy the URL of an open document or snapshot:

- 1 With the document or snapshot open in a work page,
- 2 Click **Create direct URL** in the **Document** set of the **Actions** pane.
- 3 **Click the icon** to copy the URL to the clipboard.
- 4 Click **OK** to close the dialog.
- 5 Use the relevant command to paste the URL into a file or application.

To copy the URL of a closed document or snapshot:

- 1 From the Home View, select the **Documents** tab.
For further information on the Home View, see chapter ["Working with the Home View" on page 295](#).
- 2 **Expand documents prefaced with a right-angle bracket** to list:
Associated snapshots
Child documents (Child) listed below the Parent (Parent)
For additional details see chapter ["Documents Tab" on page 316](#).
- 3 Select the desired document or snapshot.
- 4 Click **Create direct URL** in the **Documents** group of the **Actions** pane.
- 5 Click the icon to copy the URL to the clipboard.
- 6 Click **OK** to close the dialog.
- 7 Use the relevant command to paste the URL into a file or application.

AI-Powered Document Analysis

AI can enhance the quality verification of requirements documents by automating various checks and analyses on the who document. Techniques like Natural Language Processing (NLP) and machine learning enable AI to assess requirements for clarity, completeness, consistency, and adherence to standards. AI can also help to identify potential errors, inconsistencies, and ambiguities, leading to more robust and reliable requirements.

The application of AI to [Verifying Requirement Quality](#) provides access to an assessment of requirements - one statement at a time. This same functionality can be applied to all the requirements in a document, checking each one for the essential characteristics: Atomic, Correct, Complete, Verifiable, Consistent and Unambiguous.

In the section we discuss:

- ["Verifying Document Quality" on page 227](#)
- ["Finding Document Conflicts" on page 228](#)
- ["Applying Analyze Gaps" on page 229](#)
- ["AI Autocomplete" on page 230](#)

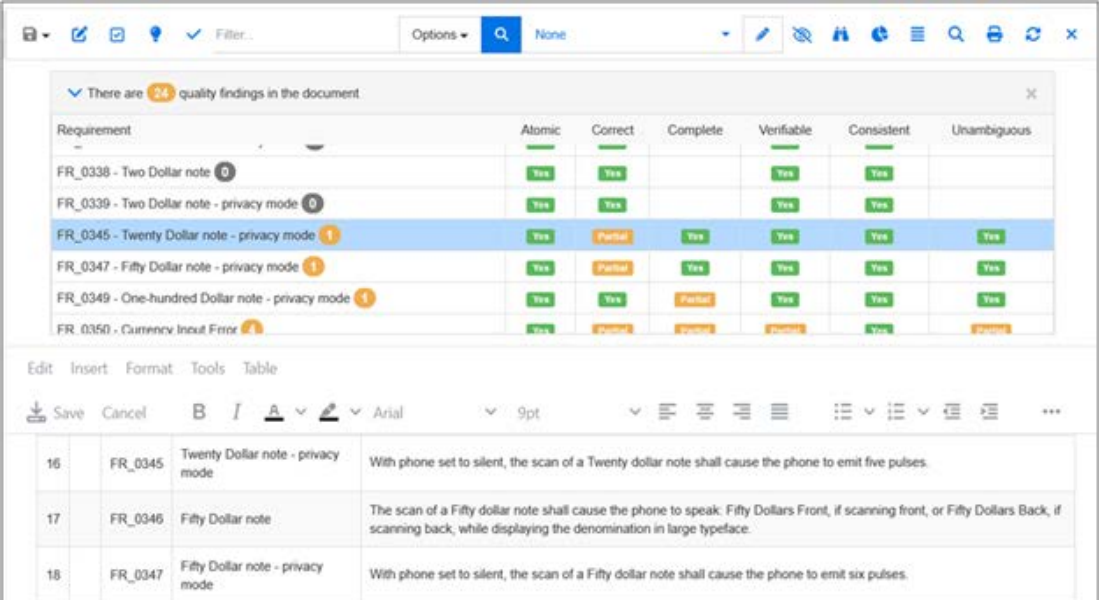
Verifying Document Quality

The verification of requirement quality reviews the requirement statement and reports back with its findings for the essential characteristics: Atomic, Correct, Complete, Verifiable, Consistent and Unambiguous.

To Verify the Quality of the requirements in a document:

- 1 From the Document Tab in Home View, highlight a document.

- 2 Double click the document to Open, or click on Open from the Documents set in the Actions pane.
- 3 Ensure that the document is presented in **Entire Document View** (see ["Detail Pane" on page 218](#)).
- 4 To initiate the Quality Check, click the **Verify Quality** check icon ✓ .
 - a You will be informed: **AI Verification Started**.
 - b You will be informed: **AI Verification Complete**.
- 5 The results dialog lists the quality findings, listing Requirement ID and Title, with access to the detail as the results are reviewed.



Requirement	Atomic	Correct	Complete	Verifiable	Consistent	Unambiguous
FR_0336 - Two Dollar note	Yes	Yes		Yes	Yes	
FR_0339 - Two Dollar note - privacy mode	Yes	Yes		Yes	Yes	
FR_0345 - Twenty Dollar note - privacy mode	Yes	Partial	Yes	Yes	Yes	Yes
FR_0347 - Fifty Dollar note - privacy mode	Yes	Partial	Yes	Yes	Yes	Yes
FR_0349 - One-hundred Dollar note - privacy mode	Yes	Yes	Partial	Yes	Yes	Yes
FR_0350 - Currency Input Error	Yes	Partial	Partial	Partial	Yes	Partial

Edit	Insert	Format	Tools	Table
Save	Cancel	B	I	A
Arial 9pt				

16	FR_0345	Twenty Dollar note - privacy mode	With phone set to silent, the scan of a Twenty dollar note shall cause the phone to emit five pulses.
17	FR_0346	Fifty Dollar note	The scan of a Fifty dollar note shall cause the phone to speak: Fifty Dollars Front, if scanning front, or Fifty Dollars Back, if scanning back, while displaying the denomination in large typeface.
18	FR_0347	Fifty Dollar note - privacy mode	With phone set to silent, the scan of a Fifty dollar note shall cause the phone to emit six pulses.

- 6 Select a requirement from the Quality Findings list, e.g., FR_0345. The matching requirement will move to the top of the details section.
- 7 Review and consider the response(s).

☆ Finding Document Conflicts

The action to perform conflict analysis is executed from an open document, because that is where requirements are assembled for distribution and review. Even if you export requirement sets in Excel or Word rather than documents, it is useful to collect requirements into a simple document container to use as input for [Verifying Document Quality](#) or the **Find Conflicts** action before submitting requirements for review.

AI can identify inconsistencies or conflicts between requirements within the selected document. An example of a conflict would be the existence of two requirements containing contradictory statements:

- FR_0435 The system shall allow http.
- FR_0487 The system shall only allow encrypted communication.

The response to the conflict analysis is a list of potential problems with links to the specific requirements raising the issues.

To locate and report conflicts:

- 1 From the **Home** View, select the **Documents** tab.
- 2 Select the document, and click on Open from the Documents set in the Actions pane, or double-click the document name to open the document.
- 3 Click on  **Find Conflicts** from the Document Section of the Actions Pane
A message is displayed: **Start Analysis**
Followed by: **Analysis Complete**
- 4 Review the responses and make appropriate changes.

 Applying Analyze Gaps

Apply AI to search for gaps in the set of requirements defining a feature or component. **Analyze gaps** attempts to identify the holes and then to provide requirements that have the potential to fill those gaps.

Have the analysts mentioned AI Image Recognition, with no consideration to performance and response times? Is memory usage mentioned, without specifying concrete limits?

The response to the Analyze Gaps consists of:

- **Finding:** What the analysis determines to be missing. For example: *There is no requirement addressing the performance and response time of the object recognition feature.*
- **Summary:** A short explanation of the finding. For example: *This gap was identified because, while accuracy is crucial, the response time of AI features can significantly affect user experience, especially in real-time applications.*
- **Suggested Requirements:** A proposed Title and requirement statement with a check box that enables the user to select and create the requirement. For example:

Title: AI Recognition Response Time

Statement: Establish response time benchmarks for AI object recognition to ensure timely performance in identifying objects in images, such as processing within 1 second for common image size.

As with the generation of Test Cases or the auto-completion of any object, sometimes the suggestions can be adopted, as is, and sometimes they indicate minor issues with the clarity of the requirements defined. In either case, the responses can be useful to the requirements.

To locate and report gaps:

- 1 From the **Home** View, select the **Documents** tab.
- 2 Select the document, and click on Open from the Documents set in the Actions pane, or double-click the document name to open the document.
- 3 If the scope is to be limited to a single chapter or subchapter, highlight the chapter.
- 4 Click on  **Analyze Gaps** from the Document Section of the Actions Pane

- a If desired, select a class to limit the analysis.
 - b Check the box to Run in Background, if you would like to get on with things while the analysis is running.
 - c Check the box to group the proposals by document chapter.
- 5 Click the button to **Start Analysis**
- 6 Review the responses, and:
- Check the box** to select one or more of the **Suggested Requirements**.
 - Use Select all** to check all boxes.
 - Click Accept** to create Requirements from the elements selected.
- Requirement IDs and statements are listed in the **Accepted** dialog.
- If no requirements look interesting,
- Click Regenerate** to give it another try.
- 7 Click **Close** to exit.

☆ AI Autocomplete

When you find yourself staring out at the screen contemplating the lack of a good ending on a requirement statement — try asking AI what it thinks. Hit the space bar, type an asterisk (*) maybe followed by a letter (*t) or two and see what comes back.

The default number of proposed completions is 3, which seems about right as you can always ask again.

3.1.2 Documentation Requirements

3.1.2.1 On-line help provided

Suspect: No Reqmt ID: MRKT_000007 Priority: **High**
Time Modified: 24-FEB-2021@05:40:54

The ePhoto system shall make the use of online help so that no documentation other than a "Getting Started" guide needs to be supplied. *

3.1.3 Functional Requirements

3.1.3.1 EPhoto will be an online photo album

Suspect: No Reqmt ID: MRKT_000001 Priority: **High**
Time Modified: 24-FEB-2021@05:30:43

This guide will be concise and user-friendly, providing essential information to get users acquainted with the ePhoto system.

It will contain step-by-step instructions to help users navigate and utilize the system's features efficiently. Users will find this guide helpful in understanding the basics and getting quickly acquainted with the system's functionalities.

Choose one, or consider all and finish it yourself.

Document Creation and Maintenance

This section discusses the details of document creation and deletion, the document settings assigned at creation and their modification over the life of the document.

["Parent and Child Documents" on page 231.](#)

["Creating a New Document" on page 232.](#)

["Creating a New Document from the Hierarchy View" on page 235.](#)

["Using Workflows with Documents" on page 238.](#)

["Removing a Document" on page 241.](#)

["Saving a Copy of a Document Under a New Name" on page 241.](#)

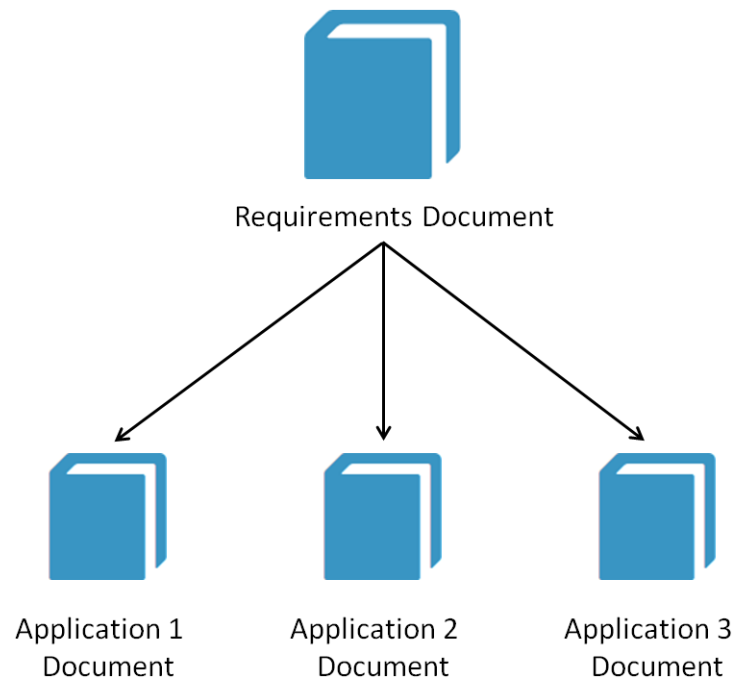
["Document Formats and Views" on page 242.](#)

Parent and Child Documents

Documents created with the intention of managing a common structure and content can be created as Parent Documents, their structure and content is inherited by each child created based on the parent. Content defined in or linked into the parent, cannot be modified in the child.

A child document inherits its layout from the parent. Changes to the parent document can be propagated immediately to any related child document, while text introduced into the child is owned and controlled by the child.

The following image shows a use case for parent/child documents.



The creation and management of Parent and Child documents is discussed as part of the general process of ["Document Creation and Maintenance" on page 230.](#)

Creating a New Document

A new document may inherit the settings, chapter structure and even the content from an existing document.

Many organizations create and maintain document templates. They can include standard settings, cover page, chapters with overview text, a corporate glossary, and any additional sections required by the organization. There may be one such template, or one for each project or report type. Create it once, review and approve it and then use it as a basis many times.

One of the following may be used as a basis for the creation of a new document.

- A blank or pre-defined template.
- The chapter structure of an existing document or corporate template.
- The chapter structure and requirements of an existing document.



Document: The object listed in the Home View Documents tab has been defined as a Document.



Template: The object listed in the Home View Documents tab has been defined as a Template, and will be listed for selection when creating a document based on a Template.



Snapshot: The object listed in the Home View Documents tab is a frozen (immutable) version of the associated document.

To create a new document:

1 Select Document from the **New** menu.

2 Name: Enter a name for the document.

The Maximum Length for a Document Name is 256 characters.

3 Category: Select the category to which to add the new document.

4 Description: Enter a description of the document.

The description is maintained in the **Document Settings** dialog and can be included when listing documents from the Documents Tab in Home View.

The Description is not copied when the document content is copied.

5 Create Options: Select one of the following:

- a Blank:** Create the document based on the default **blank** template. When selected, no further options as to possible document basis are presented.
- b From Template:** Create the document based on one selected from the set of documents defined as Templates.

— Options based on Template selection:

Reuse Requirements: When selected, requirements contained in the template will be included in the new document. This option is selected when a standard set of corporate or project requirements are included in each Software, System, Design or Test document.

Copy Requirements: When selected, copies of the requirements contained in the selected template will be included in the new document. This option may be selected when a document is populated with a standard set of corporate or project requirements that will belong to the document, and tracked and modified within it.

- **Copy with Links:** Include links with copied requirements.
- **Link new Requirements with Original:** Copied requirements will be linked to the requirement it was copied from.

c From Document:

Chapters Only: Creates the document based upon the chapter structure of an existing document selected from the list presented in **Find Document**.

Chapters and Requirements: Creates the document based upon the chapter structure and requirements of an existing document elected from the list presented in **Find Document**.

Copy Requirements: This option is only available if the option **Chapters and Requirements** is selected.

If this option is selected: All requirements of the original document will be copied and the copy will be added to the new document. Links between requirements are copied as well if the linked requirements are part of the document.

If this option is not selected, all requirements of the original document will be reused (linked) in the new document.

- d As Child:** A child document inherits its layout and content from the parent (see ["Parent and Child Documents" on page 231](#)). Enabling this option will raise a list of available parents from which one may be selected.

Based on Sibling: This option is only available when **As Child** is selected. Selecting this option allows the user to base the new document on an existing child. The new child document will be a copy of the selected child document and will be created as a child of the same parent.

6 Find Document or Template:

Find Template: If From Template was selected, a list of available templates will be presented for selection.

Find Document: If **From Document** was selected, a list of available documents will be presented for selection.

Select the category in which the document or template is located.

Select the document or Template. If needed, use the *Search* box to filter the list.

7 Document Settings:

- a Inherit from selected Document:** If selected, the document options listed below will reflect those in the selected base Document or Template.

To modify these settings, clear this option and continue.

- b Export Title:** Select to use the string in the **Name** field as the document's title when exporting to Word.

c Update To Current (Tip):

If Checked: The document will always reflect the most recent version of those requirements added with the Status of **Current**.

If Cleared: Ensures that changes applied to requirements within the document will **Not Reflect** reflect changes made outside the document.

To **manually change** the version of a requirement included in a document see: ["Exchange Requirement Version in a Document" on page 273](#).

**NOTE Changes to Setting: Update To Current (Tip)**

Checking the box, after a document has been created with Update to Current unchecked will raise a confirmation dialog asking:

Do you want to update all existing requirements to the latest version in the document?

OK will change the setting, and update every object in the document to the latest version (i.e., status Current).

Cancel will change the setting, leaving content unchanged.

Why use Update to Current (Tip):

This setting is sometimes checked during the requirements definition and review process, but unchecked when the document begins final review in order to control changes as the product nears release.

It might be the case, for example, that the requirements document is in review for release 2.2, while work is underway for release 3. Clearing this option will ensure that the 2.2 document will no longer reflect changes applied to ongoing release 3 work. Changes made to requirements from **inside** the open document will be reflected.

- d Glossary:** Select this option to automatically create the chapter "Glossary". This chapter contains the explanations for the terms used in this document.
 - e ECP Controlled:** Only visible if the Instance Administrator has created a Class of type ECP. ECP Control is a process, and once adopted in a document, it cannot be undone. For additional information please see ["Assigning an ECP to a Document" on page 237](#).
 - f Parent Document:** Select this option to make the document a parent document. This option will display as grayed out and checked if the document is a parent, and will not display at all if the document is a child.
 - g Table of Figures:** Select this option to automatically create the chapter "Table of Figures". This chapter contains all images or tables with captions (see "Add caption" in chapter ["Find and Select List Values" on page 41](#)). It is updated when a document is opened or reloaded.
 - h Document Template:** Select this option to create the document as a Template.
- 8 Workflow:** Select the workflow to be used with documents.

Selecting a workflow loads the attributes (e.g. Reviewer) of the workflow in this dialog.

If a workflow is selected, attributes will be included in the **Custom Attributes** section. Depending on Workflow settings, some attributes may be mandatory. Mandatory attributes must be populated to allow creation of the document.

- 9 Click **OK**.

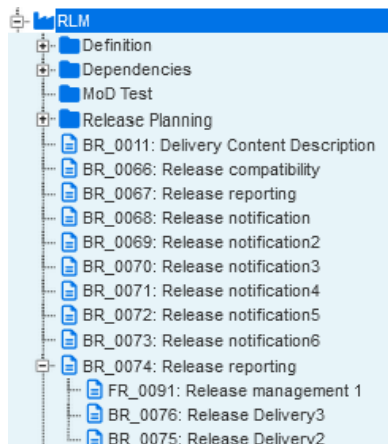
Creating a New Document from the Hierarchy View

The following describes the process for creating a document from the Hierarchy. The document navigation pane will reflect the hierarchy structure.

It is also possible to add a set of requirements to an existing document based on a segment of the hierarchy structure. For details see ["Adding Requirements to a Document" on page 264](#)

To create a new document:

- 1 From the Home View, select the segment of the hierarchy from which to create the document. In the example below, the category RLM and its content is selected.



- 2 Select **Create Document** from the **Hierarchy** set of the Actions pane.

The **New Document Based on Hierarchy** dialog opens.

- 3 **Select Document** from the **New** menu.

- 4 **Name:** Enter a name for the document.

The Maximum Length for a Document Name is 256 characters.

- 5 **Category:** Select the category to which to add the new document.

- 6 **Description:** Enter a description of the document.

The description is maintained in the **Document Settings** dialog and can be included when listing documents from the Documents Tab in Home View.

The Description is not copied when the document content is copied.

- 7 **Find Document:** A list of available documents, including Templates, is presented for selection.

Select the category in which the document or template is located.

Select the document or Template. If needed, use the *Search* box to filter the list.

8 Document Settings:

- a Inherit from selected Document:** If selected, the document options listed below will reflect those in the selected base Document or Template.

To modify these settings, clear this option and continue.

- b Export Title:** Select to use the string in the **Name** field as the document's title when exporting to Word.

c Update To Current (Tip):

If Checked: The document will always reflect the most recent version of those requirements added with the Status of **Current**.

If Cleared: Ensures that changes applied to requirements within the document will **Not Reflect** reflect changes made outside the document.

To **manually change** the version of a requirement included in a document see: ["Exchange Requirement Version in a Document" on page 273](#).



NOTE Changes to Setting: Update To Current (Tip)

Checking the box, after a document has been created with it unchecked will raise a confirmation dialog asking the question:

Do you want to update all existing requirements to the latest version in the document?

OK will change the setting, and update every object in the document to the latest version (i.e., status Current).

Cancel will change the setting, leaving content unchanged.

Why use Update to Current (Tip):

This setting is sometimes checked during the requirements definition and review process, but unchecked when the document begins final review in order to control changes as the product nears release.

It might be the case, for example, that the requirements document is in review for release 2.2, while work is underway for release 3. Clearing this option will ensure that the 2.2 document will no longer reflect changes applied to ongoing release 3 work. Changes made to requirements from **inside** the open document will be reflected.

- d Glossary:** Select this option to automatically create the chapter "Glossary". This chapter contains the explanations for the terms used in this document.
- e ECP Controlled:** Only visible if the Instance Administrator has created a Class of type ECP. ECP Control is a process, and once adopted in a document, it cannot be undone. For additional information please see ["Assigning an ECP to a Document" on page 237](#).

- f Parent Document:** Select this option to make the document a parent document. This option will display as grayed out and checked if the document is a parent, and will not display at all if the document is a child.
 - g Table of Figures:** Select this option to automatically create the chapter "Table of Figures". This chapter contains all images or tables with captions (see "Add caption" in chapter ["Find and Select List Values" on page 41](#)). It is updated when a document is opened or reloaded.
 - h Document Template:** Select this option to create the document as a Template.
- 9 Workflow:** Select the workflow to be used with documents.
- Selecting a workflow loads the attributes (e.g. Reviewer) of the workflow in this dialog.
- If a workflow is selected, attributes will be included in the **Custom Attributes** section. Depending on Workflow settings, some attributes may be mandatory. Mandatory attributes must be populated to allow creation of the document.
- 10** Click **OK**.

Assigning an ECP to a Document

ECPs are a high-level change management class type (Engineering Change Proposal) that can be used to collect multiple change requests into a single package.

If ECP Control is enabled on the document, the name of current ECP is displayed to the right of the Instance Breadcrumb.

RMDEMO > RMDEMO > ePhoto Requirements ▾ ECP-00001 (Changes to Support Advantix Prints)

If ECP Control is in effect, but the current user has not assigned an ECP, the document will be Read-Only until the ECP is assigned. Instead of the name of an ECP, you will see this message: **(No ECP, document is read-only)**.



NOTE Enabling ECP Control

To enable ECP Control on a document, see ["Editing Document General Settings" on page 243](#).

To assign an ECP:

- 1** Open the document to the Document work page, if it is not already open. See ["Opening Documents or Snapshots" on page 213](#).
- 2** Click **Assign ECP** in the Documents group of the Actions pane. The Assign ECP dialog opens.
- 3** Select **ECPs** in the **Look for class** list.
- 4 Filters:** Apply saved filters to search the ECPs.
- 5 Constraints:** As needed, specify criteria to locate the desired ECP. See ["Quick Find and Advanced Search" on page 42](#) and ["Relationship Constraints Tab" on page 51](#).

- 6 Display Options:** As needed, specify how to display the results. See ["Display Options Tab" on page 53](#).
- 7** Select the **Case sensitive search** check box if you want the search results to exactly match the capitalization of the specified attribute values.
- 8 Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog.
- 9 New Search:** Click this button to clear the current search criteria and results.
- 10** Select the desired ECP in the search results.
- 11** Do any of the following:
 - Assign:** Click this button to assign the selected ECP to the document.
 - Clear:** Click this button to remove the selected ECP from the document.

Using Workflows with Documents

If configured by your administrator, Workflows can be associated with Documents.

To assign a document to a workflow, do the following:

- From an open document click the **Document Settings** Action.
- From the General Tab, choose a Workflow, see [Editing Document General Settings](#).

Depending on the process defined by the Instance Administrator, there may be custom attributes associated with the selected Workflow. The following contains the default

custom attributes defined with the Workflow Container Class, see [Using Containers with Workflows](#).

Figure 4-8. An example of Workflow Custom Attributes

Executing a Transition on a Document

The current and next workflow state are displayed at the end of the Breadcrumb, above the Actions Pane. For example, the following shows the document in draft state, with the transition 'To Review' the only possible next step.

Figure 4-9. Workflow Status on the left, Transition(s) on the right.

To execute a transition, do the following:

- 1 From the Open Document, click the next transition.
 - If there are several choices, the transition will be a drop-down.
 - If there is no next transition displayed, the document has reached its final transition state.
- 2 If transition rules require additional information, a form is raised.

Figure 4-10. The Workflow Transition Form, is raised when required.

Deleting a Document

When you delete a document, it is marked as deleted, but the data is retained and can be displayed using the action **Show Deleted Documents**. Users can delete documents if you have "Delete" permission for documents and collections.

When a document with Snapshots is marked as deleted, associated snapshots will also be marked as deleted.

Deleting a Document From Home View

- 1 Open the Home View, Documents tab.
- 2 Select the document you wish to delete.
- 3 Click **Delete** in the **Documents** group of the Actions pane.
- 4 When prompted, confirm that you want to delete the document.

For a Parent document, select how to handle Child documents. If you select **Break dependency of all child documents**, the dependency cannot be restored if the deleted parent is later undeleted.

Deleting a Document From Document View

- 1 In the Navigation pane of the Document work page, select the root of the document.
- 2 Click **Delete** in the Documents group of the Actions pane.
- 3 When prompted, confirm that you want to delete the document.

For a Parent document, select how to handle Child documents. If you select **Break dependency of all child documents**, the dependency cannot be restored if the deleted parent is later undeleted.

Undeleting a Document

When you delete a document, it is marked as deleted, but the data is retained. When you undelete a document, the document, chapters, and associated snapshots are restored.

Undeleting a Document from the Home View

- 1 From Home View, select the **Documents** tab.
- 2 Select **Show Deleted Documents** in the **Documents** group of the Actions pane.
Deleted documents are listed in a lighter type face.
- 3 Select the document you wish to undelete.
- 4 Click **Undelete** in the **Documents** group of the Actions pane.
- 5 When prompted, confirm that you want to undelete the document.

Undeleting a Document from the Document View

- 1 In an open document, select the root of the document.
- 2 Click **Undelete** in the **Documents** group of the Actions pane.
- 3 When prompted, confirm that you want to undelete the document.

Removing a Document



CAUTION! Remove Document Action

Removing a document removes the document with its chapters and associated snapshots from the database **permanently**.

Removed documents, chapters, and snapshots cannot be restored.

When in doubt: Use the **Delete** Action

Removing a document, **does not** remove requirements from the database. You can remove documents if you have "Remove" permission for documents, collections, and classes.

Removing a Document from the Home View

- 1 From Home View, select the **Documents** tab.
- 2 Highlight the document you wish to Remove.
- 3 Click **Remove** in the **Documents** group of the Actions pane.

Saving a Copy of a Document Under a New Name

Documents may be saved under a new name using the 'Save As' Action.

Options are provided to include Chapters, Chapters and Documents or to create copies (i.e., new objects) based on the objects in the source document.

The **'Save As'** dialog, available from the Documents set on the Action pane, can be accessed from:

- An open document or snapshot
- A document or snapshot selected from the Home View, Documents tab

The **Document Save As** dialog:

Name: Enter a name for the new document. The name will default to *Copy of Original*.

Description: Describe the new document, and, perhaps, how it differs from the source.

Category: The target category will default to that of the source, however, any category to which the user has write access may be selected.

Create Options:

a Chapters and Requirements:

Select this option to include all chapters and requirements in the new document.

b Copy Requirements:

Available if Chapters and Requirements was selected.

Selecting this option will cause new requirements (copies of the objects in the source) to be included in the new document.

- **Copy with Links:** If enabled, copied requirements will include links.
- **Link new Requirements with Original:** Copied requirements will be linked to the original, assuming the relationship, which would be cyclic, exists.
- **Copy with Collections:** The new requirements will be included in all Collections that include the original.

c Chapters Only:

Select this option to copy only the chapters from the source document (no requirements).

To Save: Click **OK**.

Document Formats and Views

Dimensions RM provides the following methods to assist in configuring document structure, as well as document views, both public and private. This section contains the following:

- **Document Settings**

The Document defaults set by Administrators and Users in Instance and User settings establish general defaults. For details, see ["Document Settings" on page 83](#)).

- **Document Settings Dialog**

Using the settings dialog, the properties, format, and structure are established for a specific document, see ["Document Settings Dialog" on page 243](#).

- **Document Views**

The Document Settings Dialog enables users or administrators to define the display for a specific document; however Document Views can establish an overall set of defaults to be applied across documents.

A Public View might be defined to create a general layout for all Business Requirement Documents (BRD) or Software Requirement Specifications (SRS). An individual analyst or reviewer may also define the layout that best addresses their own needs, For details, see ["Document Views" on page 251](#).

Document Settings Dialog

The **Document Settings** dialog provides access to attribute details, general formatting, options for display, attributes for export, class restrictions and dependencies. Most settings can be changed during the life of the document.

Document Settings are accessed from within an open document, or by highlighting an entry from the Document Tab and clicking on the **Document Settings** action.

The dialog consists of six tabs:

General: Allows users to modify document properties, including name, description, detail settings, and workflow. See ["Editing Document General Settings" on page 243](#).

Format Document: Allows users to specify the document layout for a chapter or the whole document. For further information, see ["Formatting Documents" on page 245](#).

Display Options: Allows users to specify the visible attributes when using Grid, Editable Grid, or Paragraph mode (without Template). For further information, see ["Display Options Tab" on page 247](#).

Export Options: Allows you to specify the attributes for each class when exporting the document. For further information, see ["Export Options Tab" on page 250](#).

Restrict Classes: Provides a mechanism for restricting the document content to a specified list of classes, see ["Restrict Classes Tab" on page 250](#).

Dependencies: If this is a parent or child document, the dependencies are listed. For further information, see ["The Dependencies Tab" on page 250](#).

Editing Document General Settings

To edit a document's properties use the Document Settings, General Tab:

1 Name: Enter or modify the document name.

2 Description: Enter or modify the document description.

The description can be included when listing documents from the Documents Tab in Home View.

The Description is not copied when the document content is copied.

3 Category: From the Category drop-down the folder in which the document resides may be modified.

4 Workflow: Select or modify the selection of the workflow to be used with the document.

Selecting a workflow loads the attributes associated with the workflow. These likely include Author, Start and End Dates, Reviewer and Approver.

5 Document Settings:

Export Title: Select this option to include the document **Name** as the document's title when exporting to Word or PDF.

Update To Current (Tip): If selected, the document will always reflect the most recent version of requirements added with the Status of **Current**. Clearing this option ensures that all requirements in the document will not be affected by modifications made outside the document.

Checking this box, after it has been unchecked, will raise a confirmation dialog asking the question: *Do you want to update all existing requirements to the latest version in the document?*

OK will change the setting, and update every object in the document to the latest version (i.e., status Current).

Cancel will change the setting, leaving content unchanged.

To **manually change** the version of a requirement included in a document see: ["Exchange Requirement Version in a Document" on page 273](#).

About the Use of Update to Current (Tip):

This setting is often checked during the requirements definition and review process, but unchecked when the document begins final review.

It might be the case, for example, that the requirements document is in review for release 2.2, while work is underway for release 3. Clearing this option will ensure that the 2.2 document will no longer reflect changes applied to ongoing release 3 work. Changes made to requirements from **inside** the open document will be reflected.

Glossary: If the Instance Administrator has chosen to create the Glossary Class, check this box in order to generate a glossary reflecting definitions for terms used in this document (see ["Glossary Tab" on page 327](#)).

ECP Controlled: Only visible if the Instance Administrator has created a Class of type **ECP**. ECP Control is a process that ensures document modifications are associated with an Engineering Change Package (ECP). For additional information please see ["Assigning an ECP to a Document" on page 237](#).

Parent Document: Select this option to mark the document as a parent document. (see ["Parent and Child Documents" on page 231](#)).

Update from Parent: This setting is only available from **Child** documents. This setting works like **Update to Current (Tip)**.

When Checked: Changes made to the parent will be applied to the child document when the Child is opened.

When Unchecked: Changes made to the parent will NOT be applied to the child when the Child is opened.

Checking this box, after it has been unchecked, will raise a confirmation before applying all updates introduced into the parent since the box was unchecked.

Table of Figures: Select this option to automatically create the chapter "Table of Figures". This chapter contains all images or tables with captions (see ["Add](#)

caption" in chapter ["Find and Select List Values" on page 41](#)). It is updated when a document is opened or reloaded.

Document Template: Indicates that the Document is defined as a Template, created to be used as a base for document creation.

Click **OK**, if options are modified.

Formatting Documents

This section describes the functions available from **Document Settings > Format Document**.

To specify document format:

1 Page Orientation on Export:

Inherit from export template: Uses the same page orientation as specified in the publish template. If no publish template has been specified, the default (portrait) is used.

Portrait: Sets the page orientation to portrait.

Landscape: Sets the page orientation to landscape.

Reset all chapters: Resets the page orientation for all chapters to inherit from the previous chapter. This is necessary only if the orientation has been changed.

2 Entire Document View:

Entire Document selection is only available if the user has chosen Entire Document as the default setting in **Default Document View Mode**.

Settings available are:

Standard Mode: Chapters are shown as individual sections. Requirements are displayed as defined by **Requirement Layout** setting.

Compact Mode: Chapters and requirements are shown in a single table.

Note that when exporting a document in Compact Mode to Microsoft Word, the titles of chapters and requirements will not be shown in the Navigation pane of Microsoft Word; this is a limitation of Microsoft Word.

3 Requirement Layout (not available in Compact Mode):

Attributes specified in the Display Options settings are displayed/exported (see chapter ["Display Options Tab" on page 247](#)).

Editable Grid: Requirements are displayed in one or more tables, one table per class and one requirement per row. Requirements can be edited in place, a feature that is also available in Entire Document View. For details see ["Editable Grid View" on page 101](#).

Grid: Requirement are displayed in one or more tables, one table per class and one requirement per row. For details see ["Grid View" on page 103](#).

Attributes specified in the **Display Options** settings are displayed/exported (see chapter ["Display Options Tab" on page 247](#)).

Paragraph: Requirements are displayed individually, typically with title, description and selected attributes although it is possible to replace the title with any alphanumeric attribute. (see ["Display Options Tab" on page 247](#)).

In paragraph mode the title attribute is used by default when the requirement is displayed. To replace that attribute, see ["Paragraph Mode - Using an Alternate Title" on page 250](#).

Show and export LABELS for:

The following settings change how attribute labels are shown in the Detail pane and in the exported document. They are only relevant when using the Requirement Layout option **Paragraph**.

<Default Title>: If selected, the name of title attribute precedes the name of the requirement title, e.g. *Title: Database stores at least 1024 entries*

<Default Description>: If selected, the name of the description attribute precedes the description, e.g. *Text: The database shall store not less than 1024 entries*.

Format Selected Chapter:

Change or apply changes to the currently selected chapter ["Editing a Chapter" on page 258](#)

Reset all chapters:

This button reverts the *Requirement Layout* and *Show and export LABELS* for settings of all chapters in the document to the default: **Inherit From Parent**

4 Export Req. Template:

Custom templates are defined by the Instance Administrator, if defined available templates can be selected from the drop-down.

To use a custom template, the **Requirement Layout** must be **Paragraph**.

If a publish template for the requirement class exists, the layout and attributes included uses that specified in the template.

5 First Chapter Number:

In order to support documents exported in separate sections, it is possible to set the first chapter number to a starting number of your choice. The Chapter Numbers can include decimal points (e.g., 2 or 2.2).

6 Document Numbering:

To **Separate chapters and requirements numbering**, select the check box. Else, any requirements located at the same level in the document as the top-level chapters will be counted as a chapter for numbering purposes. Adding or removing such a requirement would result in the renumbering of all chapters in the document.

To define the Format string that will be used to display requirement numbers in the document, enter the desired format in this field. The string can be up to 10 characters long. The following characters have special meaning:

The number (#) character represents the position of the requirement number. (The number character is known by many names around the world, including: pound, hash, and octothorp.)

The caret (^) character serves as an escape symbol. You would use it in front of a # character if you wanted an # character to be displayed rather than representing the position of the requirement number.

The examples below assume two requirements located in a sub chapter numbered 2.1.1.

String	Example Results
.#	2.1.1.1 Mac Support 2.1.1.2 Deadline (This is the default.)
-#	2.1.1-1 Mac Support 2.1.1-2 Deadline
^##	2.1.1#1 Mac Support 2.1.1#2 Deadline
^^#	2.1.1^1 Mac Support 2.1.1^2 Deadline
RQ:#	2.1.1RQ:1 Mac Support 2.1.1RQ:2 Deadline
ReqNumber#	2.1.1ReqNumber1 Mac Support 2.1.1ReqNumber2 Deadline
	Mac Support Deadline NOTE There will be no requirement numbering displayed in the document, document tree, or the grid layout.

If the Document Numbering is changed:

After changing the numbering settings and clicking **OK**, you will be prompted to make a snapshot of the document before the new settings are applied.

This **allows you to return** to the document as it was before the changes were made.

If you do not wish to make a snapshot, just Cancel the snapshot dialog when it is raised.

Click the Refresh button to see changes to numbering take effect on the work page.

7 Document Tree:

Additions counts and information can be included through the following:

Show count of assigned Requirements in chapters title: Shows the number of requirements in the chapter or sub-chapter after the title.

Show count of assigned Requirements in chapters tooltip: Shows the number of requirements in the chapter or sub-chapter in a tooltip which is displayed if you move the mouse pointer over a chapter title.

Highlight Objects with change proposals: Highlights with orange shading all requirements with status "Proposed" as well as chapters holding proposed objects.

8 Click **OK**.

Display Options Tab

On the **Display Options** tab of the **Document Settings** dialog, users may specify the attributes included for each requirement class in the following document sections:

Detail Pane (Attributes to Display)

Navigation Pane (Attributes to Display in the Tree)

Tooltip (Attributes display when a user hovers over an attribute in the Navigation Pane)



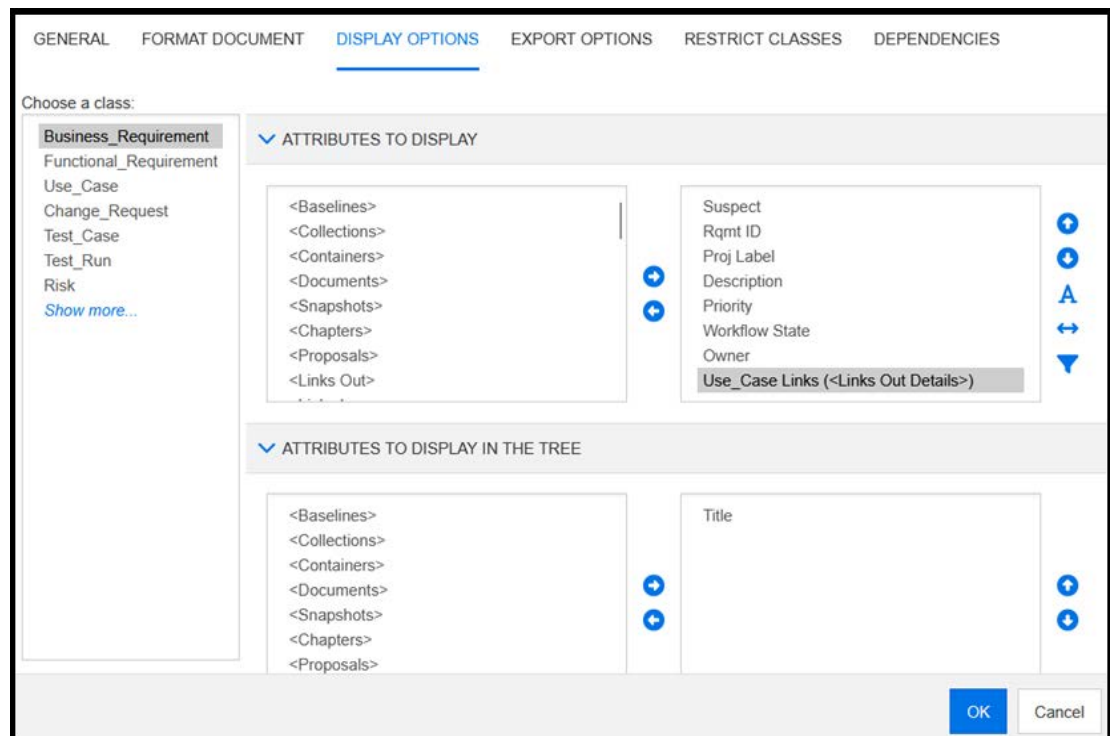
NOTE Current Document Settings

These settings are specific to the current document. To reuse settings, new documents can be based on existing documents or saved with new names.

To specify document attributes to display:

- 1 Open the document, for details see ["Opening Documents or Snapshots" on page 213](#).
- 2 Click **Document Settings** in the **Documents** group of the **Actions** pane.
- 3 Select the **Display Options** tab.
- 4 **Choose a class** for which you want to modify the display.
- 5 **Attributes To Display:**

To specify the attributes to include in the Details pane of the document, select items from the attributes listed on the left and use the right-arrow to move them to the right (for details see chapter ["Choosing the Attributes to Display" on page 40](#)).



The icons available from the Display Options tab include the following:

	Move Up: Move the highlighted entry up in the display or sort order
	Move Down: Move the highlighted entry down in the display or sort order
	Rename: Provides a mechanism to rename the displayed entry. This can be useful in: • Paragraph mode to choose an alternate alphanumeric attribute to be used as the title (see Export Options Tab). • When clarifying the display name for attributes from linked classes.
	Set Column Width: Provides a mechanism to restrict the column width in pixels.
	Filter: Provides a facility to select and display information from linked objects or associated comments. For details see: Additional Insights into linked requirements Including Filtered Comments in reports

6 Attributes to Display in the Tree:

To specify the attributes to display in the Navigation pane select items from the attributes listed on the left and use the right-arrow to move them to the right (for details see chapter ["Choosing the Attributes to Display" on page 40](#)).

7 Attributes to Display in the Tooltip:

To specify the attributes to display in the Navigation pane tooltips select items from the attributes listed on the left and use the right-arrow to move them to the right (for details see chapter ["Choosing the Attributes to Display" on page 40](#)).

8 Related Classes to Auto-Include:

Select a relationship to automatically include the linked requirements to the document.

9 Options:

Separator: Specifies the separator between attribute values in a tooltip for the selected class.

Display Length of Text Attributes: Changes the maximum display length for text attributes for both, the Navigation pane and tooltips. If the total length of the combined attribute string exceeds this limit, the string will be truncated and end in an ellipsis (...). The default is 50 characters.

10 Click OK.

Export Options Tab

The export options allow users to specify the attributes of each class to be exported. By default, the attributes specified in **Display Options** (see ["Display Options Tab" on page 247](#)) are exported.

To modify the export Options, follow the instructions in ["Display Options Tab" on page 247](#).

Restrict Classes Tab

The document Settings includes a tab to allow the document to be restricted to certain classes. A Functional Spec, for example, might be restricted to Functional Requirements and this setting will keep analysts from adding items from other classes by mistake.

This setting can be made, or modified at any time and will have no effect on requirements already in the document.

To restrict certain classes to a document, execute these steps:

- 1 Open the document, see ["Opening Documents or Snapshots" on page 213](#).
- 2 Click **Document Settings** in the **Documents** group of the **Actions** pane.
- 3 Select the **Restrict Classes** tab.
- 4 In the **Select Allowed Classes** table, clear the checkboxes of those classes you do **not** want to be added to the document. To toggle all checkboxes, click the checkbox next to **Name**.

Objects in Restricted Classes will not be included in the **Add to Chapter** dialog.

- 5 Click **OK**.

The Dependencies Tab

A child document depends on a parent document. This dependency can be viewed in the **Document Settings** dialog for either, parent and child documents.

To review the dependencies between parent and child documents:

- 1 Open the Parent or Child document, see ["Parent and Child Documents" on page 231](#).
- 2 Click **Document Settings** in the **Documents** section of the **Actions** pane.
- 3 Select the **Dependencies** tab.

If the open document is a **Parent** all children will be listed, and can be opened to review data added to the child.

If the open document is a **Child**, it is possible to break the link between Child and Parent by clicking  .

Paragraph Mode - Using an Alternate Title

When paragraph mode has been selected in a document, the default title is the requirement title. There are situations in which this is not the best option for the document content. The following allow users to replace the Title with another attribute when using paragraph mode.

- 1 Select the alphanumeric attribute to be used in place of the title.
- 2 Move it to the right side of the Attributes to display list.
- 3 Highlight the selected attribute and click the Rename icon.
- 4 Check the box *Use as requirement heading in paragraph mode*.
- 5 Click OK.

Document Views

Document Views enable users to create and populate documents in formats that will meet the needs of different members of the user community, stakeholders, or customers.

The Views dialog is accessed from within an open document or by highlighting an entry from the documents listed in the Document Tab and clicking the Views action. The dialog employs the standard document format and display option tabs; however, it is intended to address the general rather than the specific case. If, for example, we create release documents for business analysts, customers, and developers, which attributes each group will be interested in, and in what format will best suit their purposes.

The following describes the creation of a new View. Views may be copied, see [To copy a View](#), or deleted, see [To delete a View](#).

To create a new View

- 1 From an Open Document, click the Views action from the Documents section.
- 2 Click **+ New** to create a new view.
- 3 **View Name:** Enter a name for the View.
In our example, we have chosen customer specific release content.

Name	Category	Time Modified	Modified By
Release 4.2 Dev	ALM_DEMO	11-SEP-2025@11:36:33	Joseph Wilson
Release 4.2 TDR	ALM_DEMO	11-SEP-2025@11:38:28	Joseph Wilson

View Name
Release 5.0 SRcorp

Category
ALM_DEMO

☒ Public View

Save Close

- 4 **Category:** Select the Category in which the View will be saved.
- 5 **Public View:** Check this box to allow other users to access the view. If this option is not selected, the View is **Private**; only the user who created the View can access it.

Visible for: This option is only available if **Public View** is selected. To give all users permission to access the view, select **All**. To limit the view to specified groups, select, with a check mark, the group(s) that should have access.

Editable for: Choose from the list of groups for whom the View is visible may edit the view. The View should be editable by the Instance Administrator, should there be problems; the selected groups are marked with a check mark.

6 Click **Save**.

7 Select the **Format Document** tab, see [Figure 4-11](#).

The Format Document tab presents a slightly abbreviated set of document format functions with a focus on the display of the whole document, for detail see ["Formatting Documents" on page 245](#).

New View ?

GENERAL **FORMAT DOCUMENT** DISPLAY OPTIONS

Entire Document View: ☒ Standard Mode
☐ Compact Mode

Requirement Layout: ☐ Grid
☒ Paragraph

Show and export Labels for: ☒ Default Title
☐ Default Description

Note: All other Attribute Labels are shown and exported

First Chapter Number: 1

Document Numbering: ☐ Separate chapters and requirements numbering

Format string: .#

Document Tree: ☒ Show count of assigned Requirements in chapters title
☐ Show count of assigned Requirements in chapters tool tip
☐ Highlight objects with change proposals

Save Close

Figure 4-11. Review and Choose Formatting Options and Save.

8 Select the **Display Options** tab, see

The Display Options tab presents the complete set of classes in the instance, allowing users to choose the attributes to be displayed should a class be included in using the View. format functions with a focus on the display of the whole document, for detail see ["Formatting Documents" on page 245](#).

9 Click **Save**.

10 Click Close.

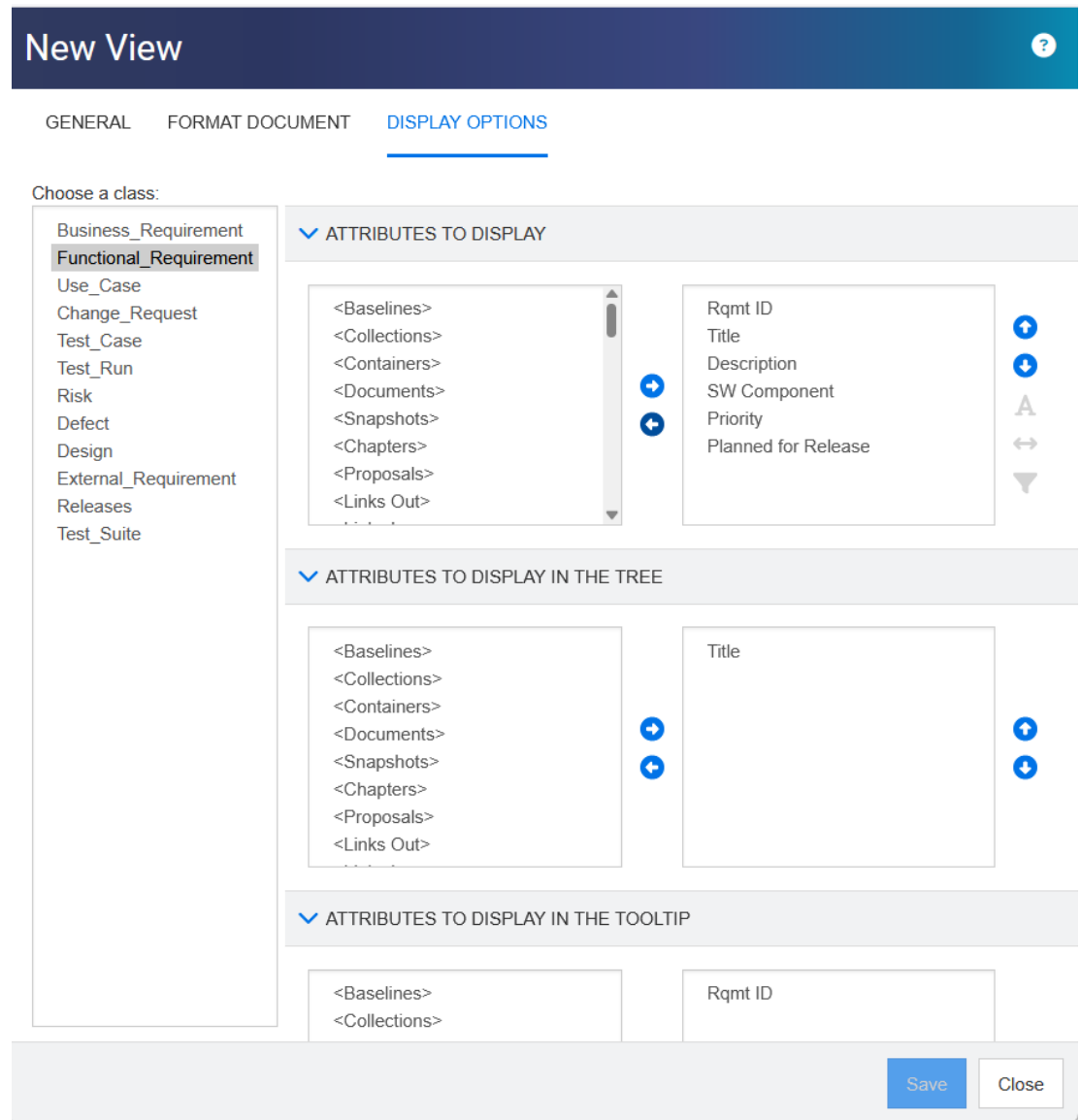


Figure 4-12. Choose Display Options and Save the tab.

To copy a View

- 1** From an Open Document, click the **Views** action from the Documents section.
- 2** Select from the named list, the view to be copied.
If the list is long, use the search to filter.

- 3 Click  **Copy** to use an existing view as a basis for a new view.
- 4 **View Name:** Enter a name for the copied View.
- 5 Proceed with [To create a new View, Step 4](#).

To delete a View

- 1 From an Open Document, click the **Views** action from the Documents section.
- 2 Select the View to be deleted from the named list.
If the list is long, use the search to filter.
- 3 Click **Delete** to remove the View; confirm.

Collaborative Document Editing

Analysts and engineering teams working together on requirement documents should consider the options available for working collaboratively and select an approach that will work best for the group.

Concurrent Editing:

Most organization configure each Instance to support the recommended concurrent editing (see [Concurrent Editing](#)). A merge facility is available to merge requirement changes made in an open document using inline editing, see [Merging Concurrent Document Changes](#).

Document Lock Action:

There is a **Document Lock Action**, accessible to users with edit permissions in an open document. We do not recommend that documents are locked and remain locked while a user is editing requirements or document text, however it is useful when making major or bulk changes to a document that would make merging difficult.

By clicking Lock in the Document section of the Actions pane a user can take temporary control of the document.

Colleagues can refresh their document view and save their changes once the document is unlocked. When attempting to save changes, the warning is raised letting the team know who has locked the document.

The object is locked for editing by Joseph Wilson in document 'ALM Requirements Release 3'



OK

Merging Concurrent Document Changes

If there are multiple people reviewing and possibly modifying a document, the best practice is to save changes often to avoid merge situations. However, if Erika and Ryan

simultaneously introduce changes to the same chapter or requirement text, the last person to attempt to save their changes must address issues of conflict. Conflict, in this case, means the same line of text or the same attribute within a requirement has been modified.

The document merge dialog displays and present options for each individual change. the user can Ignore or Apply their own changes, and then click the Save to replace the current version of the requirement with selected changes.

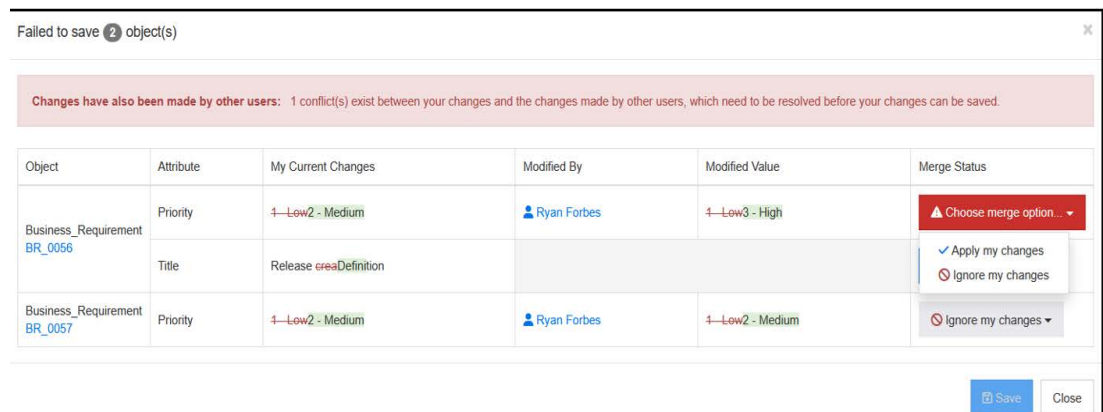


Figure 4-13. Three Changes in two Requirements, each can be reconsidered.

Multiple changes in a single requirement may raise "possible" conflict, as all changes should be reviewed together. The user may choose to apply the change, or, based on changes made by a colleague, a change might become irrelevant and be safely ignored

Working with Chapters

This section discusses the following:

- "Creating a New Chapter" on page 255
- "Editing a Chapter" on page 258
- "Editing Document Content Using Inline Editing" on page 258
- "Deleting a Chapter" on page 259
- "Copying Chapters" on page 260
- "Formatting Chapters" on page 261

Creating a New Chapter

New Chapters are created using one of the following methods:

- From the Navigation Pane of an Open Document:
 - Click  to raise the New Chapter dialog.

This dialog can be used to define, format and populate the new Chapter. For details see ["Creating a Chapter from the Navigation Pane" on page 256](#).

- From the Detail Pane when using the scrollable Entire Document.

Click into the intended insertion point and enter Title and Text

For details see ["Creating a Chapter in the Entire Document" on page 258](#)

Creating a Chapter from the Navigation Pane

- 1 Click **+**, the **New Chapter** icon at the top of the Navigation pane to open the **New Chapter** dialog.

Figure 4-14. Chapter Created using Special Chapter Number Attribute.

- 2 In the **Title** field, type the name of the chapter.
- 3 **Chapter Number:** A **special attribute** created when defining the Chapter Class, see [Defining the Chapter Class](#).

Chapter Number provides a mechanism to enter a chapter number for each chapter created in a document.

- 4 **Hide Chapter Number:** Selecting this option hides standard Chapter Numbers .

- 5 **Chapter Description:** Enter the chapter description into the HTML enabled text box. This text will display with the Chapter title in the document.
- 6 **Automatic Content:** Choose to create an empty chapter (none) or one of the following:
 - **Based on Report:** Adds all requirements queried by the report to the chapter. The following options are available:
 - Automatic Refresh:** Refreshes the content of the chapter by executing the selected report or refreshing hierarchy content each time the document is opened.
 - Filter by Categories:** If selected, the report only queries data matching the category. If unselected, the report queries all data.
 - Include Subcategories:** If selected, the report queries data from the selected category and its subcategories. Note that the **Include Subcategories** option is only enabled, if **Filter by Categories** is selected.
 - **Embed graphical Chart:** Adds all requirements queried by the report to the chapter as well as the graphical representation. The options are identical to those described for **Based on Report**.
 - **Hierarchy:** Adds all requirements of the selected category and sub-categories to the chapter. Sub-categories are represented as chapters.

Note: Content may be modified from within the document, but do not attempt to modify the hierarchy structure once a chapter has been populated based on the Hierarchy.
- 7 If report was selected, choose the report to be imported and used as the basis for the chapter's content. To modify or view the report settings, click  next to the report name.

If the report returns multiple versions or non-current versions of a requirement, they will be included in the document.
- 8 Optionally select the **Automatic Refresh** option to dynamically refresh the content in the chapter when the report is updated.

If the report specifies requirement version by status (Current, Replaced, etc.), the version(s) included in the document will be updated to reflect whichever version of the requirement is assigned to the specified status.

If the report specifies a specific object version number, that version of the requirement will remain in the document regardless of changes to its status.
- 9 If the chapter should be added as a subchapter to the object highlighted when the **New Chapter** button was clicked: check the **Add as subchapter** check box
- 10 Click **OK**.



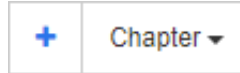
NOTE New Chapters in a Parent Document

Any chapter created in a Parent Document, will become available in the related Child Documents immediately.

Creating a Chapter in the Entire Document

To add a chapter in Entire Document, with inline editing on, click into the intended location and add the title and description. Additional details and formatting can be included later.

- 1 Move the mouse pointer at the location where you want to insert the new chapter. This will display a class selection dialog like this:
- 2 Select the relevant entry, in this example "Chapter"



- 3 When adding a chapter below an existing chapter, the following options are available:

As Sibling: The new chapter will be created on the same level as the previous chapter. If the previous chapter has the chapter number 1, the new chapter will have the chapter number 2.

As Child: The new chapter will be created as a child of the previous chapter. If the previous chapter has the chapter number 1, the new chapter will have the chapter number 1.1.

- 4 Click  . This adds an empty chapter to the document.
- 5 Specify title and content and save using Save  .

Editing a Chapter

The title and description (free form text) associated with a chapter can be modified using Inline Editing or by selecting the chapter and choosing Edit Chapter from the Actions pane.

To change the name and description of a chapter using **Edit Chapter** dialog:

- 1 From an open document, select the chapter in the Navigation pane, and click **Edit Chapter** under the Documents set in the Actions pane.
- 2 Edit the title and description as desired.
- 3 It is possible to modify or replace the content of the chapter by choosing an alternate content selection, as might be done when creating a new document. If this is the case, see ["Creating a New Chapter" on page 255](#).
- 4 Click **OK**.

To change the chapter format, see, ["Formatting Chapters" on page 261](#).

Editing Document Content Using Inline Editing

There are several methods available for document editing, consider the options available and select the method that works best for the group.

For a discussion of methods, see ["Finding and Replacing Character Strings" on page 224](#).

To edit text using Inline Editing, **do the following:**

- 1 Open the document, see ["Opening Documents or Snapshots" on page 213](#).

- 2 Check that **Inline Editing**  is enabled.
- 3 In the detail pane, click into the desired attribute of a chapter or requirement:
 - **Text attribute:** Clicking it shows the HTML editor for that text attribute.
 - **Alphanumeric Attribute:** Clicking it shows an input box in which you can enter or modify text.
 - **Date attribute:** Shows a calendar popup that allows you to select date/time depending on the configuration of the date attribute.
 - **List attribute:** Shows a popup list with the values. By typing into the text box on top of the popup, the list values can be filtered.
 - **Numeric attribute:** Clicking it shows an input box in which you can enter a number.
 - **User attribute:** Shows a popup list with the users or teams (depending on the configuration of the user attribute). By typing into the text box on top of the popup, you can filter the list values.
- 4 Edit the content as desired.
- 5 Multiple chapters and requirements can be modified before saving.
 - If you select another requirement and have not saved your changes, the modified text is highlighted, and the  is displayed.
 - Hovering over the  displays the differences between the current content and your unsaved changes.
- 6 Clicking the  opens the Current Changes dialog, showing the differences, with scrolling enabled for review of multiple or long changes.
- 7 Click **Save** in the toolbar of the HTML editor to save all changes.
- 8 If you exit the document or navigate away without saving change, a dialog is raised:

Unsaved Changes



There are unsaved changes in the document. You should save or discard the changes to continue.

Save

Discard

Cancel

Deleting a Chapter

To remove a chapter:

- 1 Select the chapter in the navigation tree. To select more than one chapter, hold the CTRL key and click.
- 2 Click the **Delete** button.

- 3 When prompted, confirm that you want to delete the selected chapters.

**NOTES** About Deleting a Chapter

- The selected chapters and any sub-chapters are deleted from the document.
- Any requirements in the selected chapter are removed from the document, but not from the RM database.
- If the document is a child document, inherited chapters can not be deleted.

Copying Chapters

In the Document View, you can copy a chapter either from the current document to another document or vice versa.

To Copy a Chapter to or From a Document

- 1 Open the document to the Document work page, if it is not already open. See ["Opening Documents or Snapshots" on page 213](#).
- 2 Select the Chapter to be copied from the Navigation Pane.
- 3 Click **Copy Chapter** in the **Documents** section of the **Actions** pane.

Copy Direction:

- 4 Select the Copy direction from the drop-down:
 - a **Copy to Document** - Will copy the selected chapter to a document accessible within the Instance or, when selected, into the same document.
 - b **Copy from Document** - Will allow the user to select a Chapter to be copied from a document accessible within the Instance or, when selected, a chapter from within the same document.

Create Options:

- 5 The following options are available in the **Create Options** section:
 - a Include Subchapters:

When **enabled**, the selected chapter and all sub-chapters (all levels) will be copied.

If **disabled**, only the selected chapter will be copied.
 - b **Include Requirements:**

When **enabled**, any requirements in the selected chapter (and sub-chapters if **Include Subchapters** is enabled) will be included with the copied Chapter.

If **disabled**, no requirements will be added to the new Chapter.
 - c **Copy Requirements:** This option is only available if **Include Requirements** is **enabled**.

When **enabled**, new requirements (copies of the requirements in the source) will be created in the target document.

If **disabled**, the existing requirements will be added to the Chapter.

- **Copy with Links:** If enabled, copied requirements will include Links.
- **Link new Requirements with Original:** If enabled, each new requirement will be linked to the original, assuming the relationship, which would be cyclic, exists.
- **Copy with Collections:** The new requirements will be included in collections that include the original.

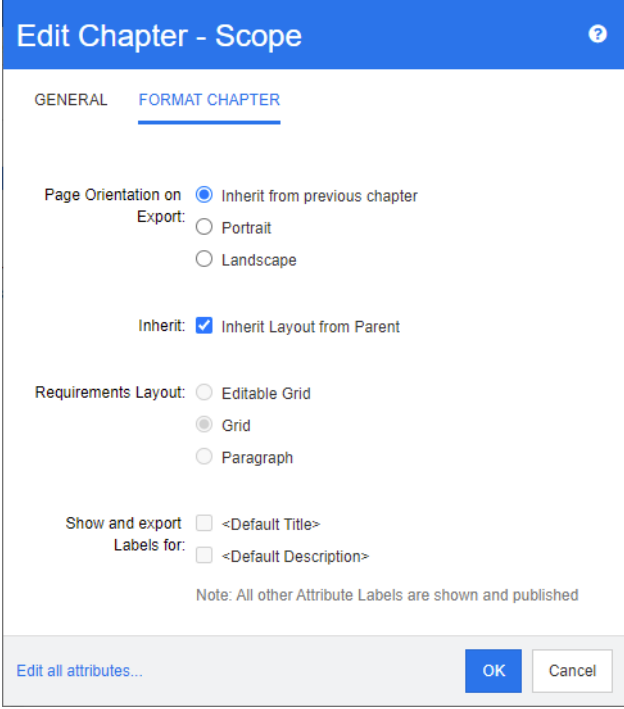
- 6 From the **Document** drop-down, select the document to be copied from or to.
 - a The list can be filtered by typing part of the document name.
 - b To open the selected document in a different tab or window, click .
 - c To select the current document, click .
- 7 Click OK.

Formatting Chapters

For formatting the root chapter (which includes the foreword), see chapter "[Formatting Documents](#)" on page 245.

To specify the layout you want for a chapter:

- 1 Click the **Edit chapter** () button. This opens the **Edit Chapter** dialog.
- 2 Select the **Format Chapter** tab.



Edit Chapter - Scope ⓘ

GENERAL FORMAT CHAPTER

Page Orientation on ☒ Inherit from previous chapter

Export: ☐ Portrait
☐ Landscape

Inherit: ☒ Inherit Layout from Parent

Requirements Layout: ☐ Editable Grid
☒ Grid
☐ Paragraph

Show and export ☐ <Default Title>
Labels for: ☐ <Default Description>

Note: All other Attribute Labels are shown and published

[Edit all attributes...](#) **OK** Cancel

- 3 **Page Orientation on Export:** The page orientation setting changes the orientation for the remainder of the document starting with the selected chapter.

- a Inherit from previous chapter:** Uses the same page orientation as the chapter that was exported before the selected chapter.
 - b Portrait:** Sets the page orientation to portrait.
 - c Landscape:** Sets the page orientation to landscape.
- 4 Inherit Layout from Parent:** Selecting this check box reverts the *Requirement Layout* and *Show and export LABELS* for settings of the chapter to the default of inheriting the settings from its parent.
- 5 Requirement Layout:**
 - a Editable Grid:** Requirements are displayed in a table (one requirement per row). When editing a document in RM Browser, you can modify the attributes of a requirement. Only attributes are displayed/exported which are specified in the **Display Options** settings (see chapter "[Display Options Tab](#)" on page 247).
 - b Grid:** Requirement are displayed in a table (one requirement per row). Only attributes are displayed/exported which are specified in the **Display Options** settings (see chapter "[Display Options Tab](#)" on page 247).

Note: If there are mixed requirements, i.e., from different classes, in the same chapter or sub-chapter, the Grid option is disabled.

Tip: If you want to include requirements of different classes into the same chapter, put the requirements of each class into a separate sub-chapter.
 - c Paragraph:** Requirements are displayed individually. If a publish template for the requirement class exist, the layout is specified in the template. If no publish template exists, only attributes are displayed/exported which are specified in the **Display Options** settings (see chapter "[Display Options Tab](#)" on page 247).
- 6 Show and export LABELS for:** The following settings change how attribute labels are shown in the Detail pane and in the exported document. They are only relevant when using the **Requirement Layout** option **Paragraph**.
 - a <Default Title>:** If selected, the name of title attribute precedes the name of the requirement title, e.g. *Title: Database stores at least 1024 entries*
 - b <Default Description>:** If selected, the name of the description attribute precedes the description, e.g. *Text: The database shall store not less than 1024 entries*.
- 7** Click **OK**.

Proposing Changes to a Chapter

Even if you do not have the right to create or edit chapters, you can request a change on a chapter if you have the "CreateCR" right for classes and the "Update" right for attributes.

To propose a change, do the following:

- 1** Select the chapter you want to propose a change for.
- 2** Click **Propose Change** from the **Requirements** group of the **Actions** pane. This opens the **Propose a Change** dialog.
- 3** Modify the Title and/or Chapter Description texts as desired.

- 4 Enter the reason for the change in the **Reason for change** box.
- 5 **Exchange in:** You can select this checkbox to replace the version in the document with the new version.
- 6 **Close after save:** Select this checkbox to close the change request after saving it. Otherwise, the change request opens for editing after you save it. **Close after save** is not available if the navigation bar is visible.
- 7 Click **Submit** to submit the change request. The change request opens for editing if the **Close after save** checkbox is not selected.

Maintaining Requirements in Documents

The section discusses:

["Creating Requirements in a Document" on page 263](#)

["Adding Requirements to a Document" on page 264](#)

["Removing Requirements from a Document" on page 267](#)

["Moving Chapters and Requirements" on page 268](#)

["Adding Document Cross References" on page 268](#)

["Adding and Inserting Glossary Entries" on page 270](#)

["Exchange Requirement Version in a Document" on page 273](#)



NOTE Copying Requirements

Objects can be selected and copied from within an open document using the **'Copy'** Action. The copied requirements are inserted into the document adjacent to source of the copy.

For details, see ["Copying Requirements" on page 131](#).

Creating Requirements in a Document

Methods for creating new requirements in an open document:

Create Using the New Action

Selecting a target Chapter location, and then the **New** Action from the Requirements set will raise the New Requirement dialog.

Quick Create Using Inline Editing

Click the mouse at a location in the document, and select the plus to populate the mandatory attributes without need of a dialog.

Create Using the New Action

Use the New Requirement dialog to create a requirement and add it to the document.

To create a new requirement using the dialog:

- 1 Select the chapter to which you want to add the new requirement.
- 2 Select **New** from the **Requirements** set of the Actions pane.
- 3 From the **Class** box, select the class for the requirement you wish to create.
- 4 Fill out the requirement attributes as required.

For additional detail, see ["Creating a New Requirement" on page 117](#).

- 5 Click **Save**.

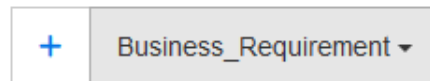
Quick Create Using Inline Editing

Inline Editing allows a shortcut to requirement creation. When establishing the core needs for a project or checking for gaps, this an excellent approach to adding requirements with the minimum attributes.

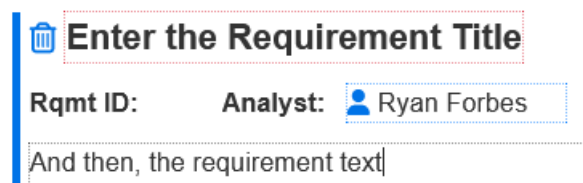
Note: If there are mandatory attributes they must be included in the Document Display Options or assigned default values, otherwise the requirement can not be saved.

To create a requirement using Inline Editing:

- 1 Move the mouse pointer at the location where the new requirement should be inserted. This will display a class selection menu like this:



- 2 From the drop-down, select the requirement class.
- 3 Click **+**. This adds an empty requirement to the document.
- 4 Enter the Attribute title, the description and any mandatory attributes defined without default values.



- 5 Click  to discard.
- 6 Click  to create the requirement and add it to the document.

Adding Requirements to a Document

Requirements can be added to selected documents from anywhere.

From the Requirements tab in Home View, from Quick Search, or from the Hierarchy one or many requirements may be selected and added to a chapter within a selected document. Requirements can also be added to an open document at targeted locations.

From Home View or Quick Search:

Requirements selected from any list, in **Home** or Quick Search may be added to documents using the '**Add to Document**' Action from the Requirements set on the Actions Pane. For details, see [Adding Requirements to Documents using any List as Input](#).

From Hierarchy:

Requirements selected from the hierarchy structure can be added, along with the structure. Select the set to be added and click '**Add to Document**' Action from the Hierarchy set of the Actions Pane. For details see [Adding Requirements to Documents using any List as Input](#)'.

From an Open Document:

Requirements can be selected and added to an open document using the '**Add to Document**' Action from the Requirements set of the Actions Pane. For details see [Adding Requirements to an Open Document](#)'

From an Open Requirement:

Expand the Containers section and click the  to open the *Add to Document* dialog. Proceed to choose the document into which the open requirement will be added.

Adding Requirements to Documents using any List as Input

The steps below describe an approach to adding selected requirements to one or more documents from any requirement list.

1 Choose the requirement(s) to be added:

From the Home View Requirements Tab:

Check the boxes for the requirements to be added, for filtered lists the check box in the header can be used to check all.

From Quick Search:

Highlight or use ctrl+click to choose the requirements to be added

From the Hierarchy:

2 Select **Add to Document** from the Requirements set on the Action Pane.**3** In the Add to Document dialog:

- To modify the columns displayed, see chapter ["Quick Search Settings" on page 81](#) or Click  **Columns**
- Enter a text string in any header column to filter the document list.
- From the Documents listed, select the target document.
- From the Chapter structure, select the target chapter and Click OK.

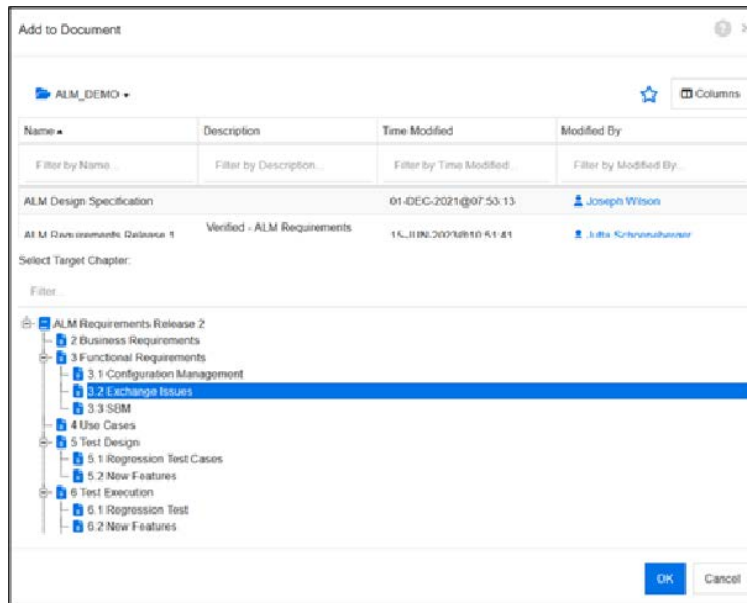


Figure 4-15. Select the Document and Chapter into which objects will be added.

4 The Confirmation message expands to list the requirements added.

5 To add the same requirements to another document:

Re-select **Add to Document** with the same chosen list.

Adding Requirements to an Open Document

Requirements can be added to an open document, using the **Quick Find** dialog or the **Advanced Search**.

- 1 From an open document select **Add to Document** from the Requirements set of the Actions pane.
- 2 Click inside the search box to open the recent requirements list.
 - a If displayed, select the relevant requirement from the list.
 - b Click **Add**.
- 3 You may also enter a search string, or choose options to restrict the search to specific categories or classes. See ["Quick Find from Recent" on page 42](#) for additional details.

If additional options are required to locate the targets of your search, use **Advanced Search** to access the full capabilities of **Find Now** (see ["Advanced Search" on page 43](#)).



TIP Exchanging Versions

To manually change the version of a requirement included in a document, see ["Exchange Requirement Version in a Document" on page 273](#).

Removing Requirements from a Document

From the Requirements tab in Home View, from Quick Search, or from any list requirements can be selected and used as input to the **Remove from Document** action.

Requirements can always be removed from an open document., simply select the object and choose

From Home View or Quick Search:

Requirements selected in **Home** or **Quick Search** lists can be removed from documents using the '**Remove from Document**' Action from the Requirements set on the Actions Pane. For additional details, see [Removing Requirements from Documents using any List as Input](#).

From and Open Document:

Requirements can be selected and removed from an open document using the '**Remove from Document**' Action listed in the Requirements set of the Actions Pane. For details see [Removing Requirements from an Open Document](#).

Removing Requirements from Documents using any List as Input

The steps below describe an approach to removing requirements from any list to a chapter in a selected document.

- 1 From the Home View Requirements Tab:
 - Check the boxes for the requirements to be removed.
 - To select multiple requirements, check while holding the CTRL key.
- 2 From Quick Search:
 - Select the requirements to be removed.
- 3 Select **Remove from Document** from the Requirements set on the Action Pane.
- 4 In the **Remove from Document** dialog:
 - To change the columns displayed, see chapter ["Quick Search Settings" on page 81](#) or Click  **Columns**
 - Enter a text string in a header column to filter the document list.
 - From the Documents listed, select the target document.
 - Click OK.
- 5 The Confirmation message lists requirements removed.
- 6 To remove the same objects from another document:
 - Re-select **Remove from Document**, with the same chosen list.

Removing Requirements from an Open Document

- Select one or more Requirements

In the Navigation pane of the Document work page, select the requirement you wish to remove from the document. To select more than one requirement, click additional requirements while holding the CTRL key.

- **Remove from Document**

Click **Remove from Document** from Requirements set of the Actions pane. The **Remove from Document** dialog box opens.

- **Delete from Instance**

To mark the requirement as deleted in the instance, check the box: *Also, Delete from Instance*.

- **Confirmation**

Click **Yes** to confirm



TIP Remove May Raise Suspicion

Depending on Relationship Property settings, linked requirements may become suspect when removed from a container.

Moving Chapters and Requirements

Chapters and Requirements can be moved in a document by using drag-and-drop. For all drag-and-drop operations, these rules apply:

- When dropping chapters or requirements onto a chapter, they are inserted before any existing objects.
- When dropping requirements onto a requirement, they are inserted before the target requirement.
- Dropping chapters or requirements in-between chapters or requirements inserts them at that location.
- When dropping chapters or requirements, the original sequence of the selected chapters or requirements is maintained.
- If automatic numbering is enabled, moving chapters or requirements changes the numbering of the moved chapters or requirements and all subsequent chapters or requirements.

To move a single chapter or requirement:

1 Select a chapter or requirement.

2 Do one of the following:

Click  or  or

Drag the chapter or requirement and drop it at its new location.

Adding Document Cross References

From within any HTML enabled text in a document, references may be created to Chapters, Requirements, Images or Tables. These references allow user to navigate within both the open and exported document

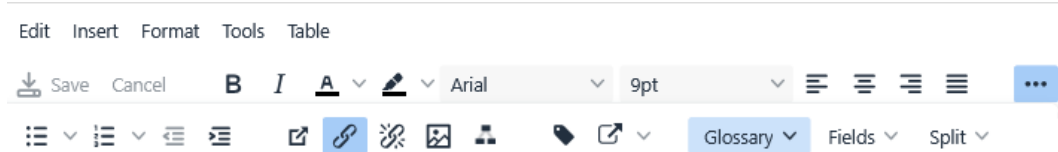
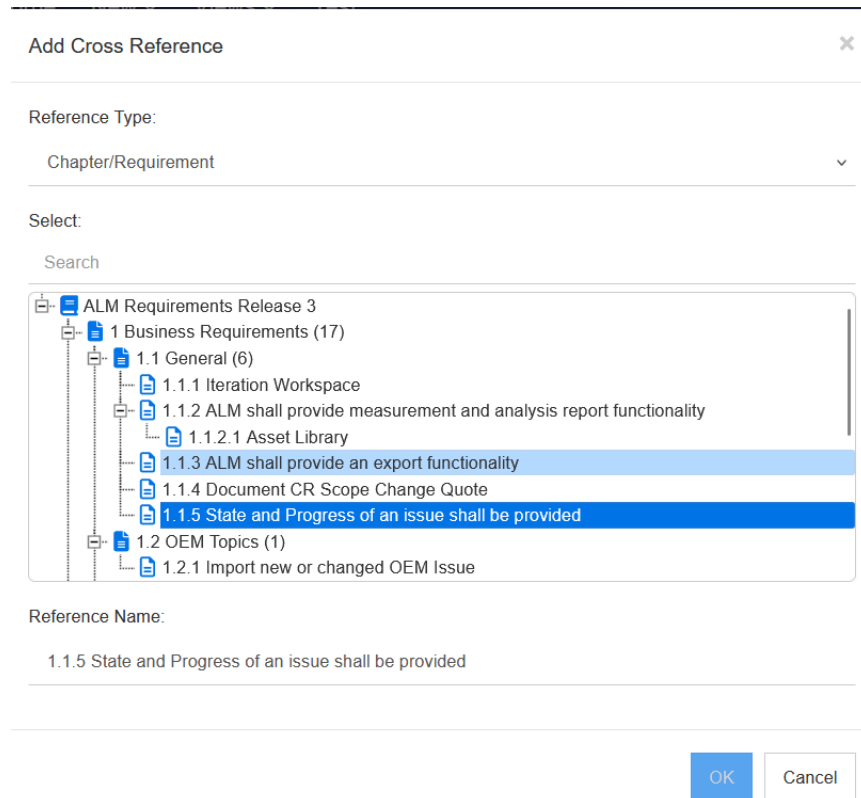


Figure 4-16. HTML Text Formatting toolbar from an Open Document

Click the icon  to access the *Add Cross Reference* dialog.



Cross Reference Type:

Chapter/Requirement: The **Select** box shows all chapters and requirements of the current document.

Figure: The **Select** box shows all images with a caption.

Table: The **Select** box shows all tables with a caption.

Select: Depending on your choice of the **Reference Type** box, the **Select** box shows chapters, requirements, images, or tables.

Search: For chapters and requirements, you can filter the entries in the **Select** box by typing parts of the text to search for.

Reference Name: This is the text used for the reference link. By default, it is the title for chapters or requirements, or the caption for images and tables.

Click OK to Save.



NOTE

It is **strongly recommended** to reference tables or images **only in chapters**. Using references from within requirement objects is not recommended for the following reasons:

When using references in requirements, the reference name (e.g. Table 3) may be correct in one document, but wrong in another (where it may be the first table). This would require to update the references each time the document is exported or to change the references in the exported document.

When references are updated, a new version of the requirement is created, which could trigger the requirement to become suspect.

Refreshing References:

To refresh a single reference, do the following:

Highlight the cross reference.

In the HTML text formatting toolbar, open the drop-down menu of the Cross Reference icon.

Select **Refresh**

To refresh all references in the document, select **Refresh Cross References** in the **Documents** section of the **Actions** pane.

Adding and Inserting Glossary Entries

Glossary entries may be created and added to the instance glossary from any HTML enabled text in requirements or free-form text in an open document. Existing Glossary entries may be selected and inserted in to HTML enabled text.

With document **Inline Editing enabled**, highlighting or clicking into any HTML enabled text will raise the *HTML Text Formatting Toolbar* at the top of the open Document dialog.

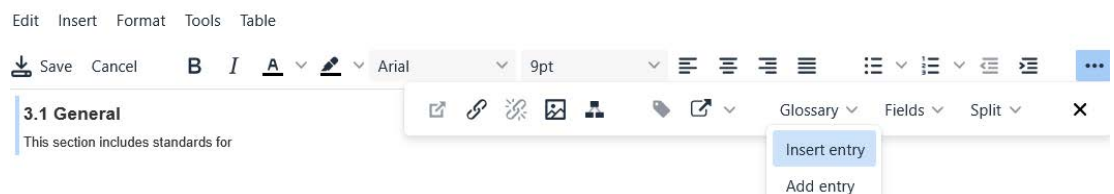


Figure 4-17. HTML Text Formatting toolbar from an Open Document

The Glossary drop-down on the HTML toolbar provides the ability to insert an existing glossary entry or to create a new one.

To Replace a word or phrase with a glossary entry:

- 1 Highlight a word or phrase in the in a requirement or chapter text, for example "release process".

- 2 Select Insert Entry from the Glossary drop-down.
- 3 Existing entries will be listed, use *Search* to filter the list.
- 4 Select the **Name** to be used to replace the highlighted text.
- 5 Click **Insert**.

To Insert a glossary entry into a requirement or chapter text:

- 1 Place the cursor into the location at which the glossary term should be inserted.
- 2 Select Insert Entry from the Glossary drop-down.
- 3 Existing entries will be listed, use *Search* to filter the list.
- 4 Select the **Name** to be inserted into the text.
- 5 Click **Insert**.

To Add a new Glossary Entry:

- 1 Highlight the term to be added.
- 2 Select **Add Entry** from the Glossary drop-down.
- 3 In the New **Term** Dialog:
 - Name: Specify the word or phrase to be defined.
 - Description:** Enter the glossary definition.
 - Synonyms:** Alternative words for the term may be entered into the **Synonyms** box. Separate entries with a comma.
- 4 **Groups:** Select the relevant Attribute Group.
 - Terms may be separated into attribute groups, for example, Corporate terms, or terms associated with specific products.
 - To add items to the Groups attribute in the Glossary Class see ["Attribute Definition" on page 533](#).
- 5 **Not Recommended:** Indicates terms that should NOT be used.

If checked:

- The term is **not** included in the Glossary chapter.
- If Glossary highlighting is enabled, the term is marked in red.

The description for Not Recommended entries should state the reason why this term should not be used.

- 6 **Category: Select the Category in which the Term should be stored.**

Storing the Term in root will make it available to all categories.

However, if some projects use Terms specific to the project they may be stored with the project.

- 7 **Show in Subcategories:**

If checked:

- The term is accessible in subcategories of the category in which it was defined.
- Users who do not have access to the root category will have access to the entry from all subcategories to which they do have access.

8 Click **Save**.

Splitting Text Into Requirements

Importing text from existing documents can often bring with it sections of text that should be defined as requirement objects. In such cases, selected phrases from the text may be split into one or more requirements.

It is also the case that a single requirement should actually be split into two - or three.

Both of these situations can be addressed from Entire Document View:

To convert imported chapter text: ["Converting Chapter Text into Requirements,"](#)

To **split** requirement text into multiple requirements: ["Converting Selected Text into a Requirement,"](#)

Converting Chapter Text into Requirements

A chapter, with overview text, can be converted into a requirement, although a requirement cannot be converted in a chapter. To perform the latter, create a chapter and copy the requirement title and content into the chapter object.



NOTE Concerning Chapter Conversion

The Title and Description attributes are transferred to the corresponding Title and Text attributes (the names depend on the target class) automatically.

After conversion, the position may change based on parent chapter structure.

If the Workflow feature is enabled for the target class, the requirement will be created in the initial State.

To convert a chapter into a requirement, do the following:

- 1 Select one or several chapters to be converted.
A chapter can only be converted if:
 - it does not include any sub-chapters,
 - it does not belong to a parent document.
- 2 Click **Change Class** in the **Requirements** group of the **Actions** pane.
- 3 From the **New Class** box, select the class you want to convert the chapter to.
If several chapters are selected, all chapters are converted into the selected class.
- 4 Click **Next**.
- 5 Populate and/or modify attributes as needed.

- 6 Click **Save**, which opens the **Change** dialog, an overview of changes.
- 7 Click the **Req ID** link of a chapter to open the original version.
- 8 Click the **New ID** link, the current requirement version opens for editing.
- 9 Click **Save**, if additional changes are made to the new requirement.
- 10 Click **Close**.

Converting Selected Text into a Requirement

With **Inline Editing enabled**, clicking inside any HTML enabled text field will raise the *HTML Text Formatting Toolbar* at the top of the open Document dialog.



To split text into a new requirement:

- 1 Highlight the text string from Chapter text or from any HTML enabled attribute within an existing requirement.
- 2 In the text editor located at the top of the **Entire Document View** click **Split** and select **Split text to new object** to open the dialog.
- 3 Select the targeted Class from the **New Class** drop-down.
- 4 Click **Next**.
- 5 Populate attributes and/or change the category as desired or required.
- 6 Click **Save**.
- 7 This opens the **Split Text to New Object** dialog which provides an overview of the conversion.
 - a Clicking the ID (left-side) opens the original version of the chapter link or the original requirement.
 - b Clicking the New-ID (right-side) opens the newly created requirement for editing.
- 8 After reviewing the results, Click **Close**.

Exchange Requirement Version in a Document

You can swap the version of a requirement currently in use in a document for another version of the requirement.

To change which requirement version is included in a document:

- 1 In the Navigation pane of the Document work page, select the requirement you wish to change.
- 2 Select **Open** from below the Requirements set of the Actions Pane.

- Expand the **History** section of the open requirement.

» LINKS					
» HISTORY					
Pedigree				Properties	
			Time Modified	Object ID	Modified By
					Current Status
			18-MAY-2006@09:17:06	33	Ryan Forbes
					Replaced
			25-NOV-2014@08:23:23	51	Ryan Forbes
					Replaced
			30-SEP-2015@01:54:24	67	Ryan Forbes
					Current (Baseline)
» POLLS					

The version in use by the document will not show an Exchange () icon (nor will rejected versions).

- Click of the version you want to use in the document. This opens the **Exchange Requirement** dialog.
- Click **Yes** to confirm the change.

Using Placeholders in Documents

Placeholders establish a location for document attributes that will be included when the document is exported. For example, the date of the most recent modification, the number of requirements contained in the document and the document owner can be listed on the title page, each time the document is exported.

This Section includes the following:

- [Adding a Placeholder to a Chapter or Requirement](#)
- [Including a Placeholder in Document Headers and Footers](#)
- [Available Document Placeholders](#)
- [Specifying a Format for Date Placeholders](#)

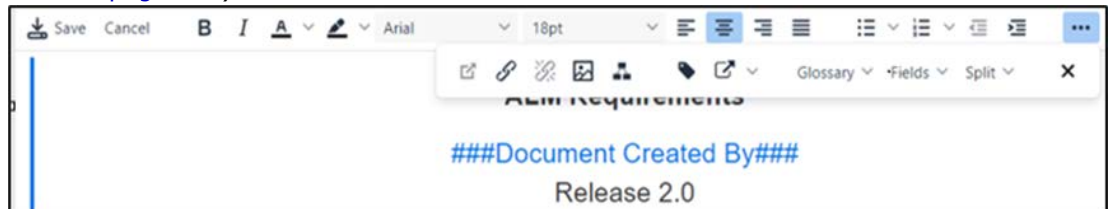
Adding a Placeholder to a Chapter or Requirement

With Document Mode set to **Entire Document View**, Placeholders can be included in chapters or requirements. Placeholders may be added to any HTML enabled text within a document.

To add a placeholder to a Title Page, Chapter or requirement, do the following:

- Open the Document (see chapter ["Opening Documents or Snapshots" on page 213](#)).
- Ensure that the document is shown in the *Entire Document View* (see chapter ["Editing Document Content Using Inline Editing" on page 258](#)).

- 3 In order to simplify the inclusion of placeholders in Title Page or Chapter Text, **Enable Inline Editing** 
- 4 Click into the Title Page, Chapter description or a Text attribute that is HTML enabled; the HTML formatting will be displayed (for details see ["Find and Select List Values" on page 41](#)).
- 5 Place the cursor on the Placeholder's target location.
- 6 Click on the ellipses (...), and from the **Fields** drop-down, click on the desired Placeholder (for a complete list of placeholders see ["Available Document Placeholders" on page 275](#))



- 7 Click **Save**.

Including a Placeholder in Document Headers and Footers

Place holders can also be used in Document Header and Footer files. The Header and footer files, once formatted, are placed in the Tomcat structure on the server. Placement is under the control of the System Administrator. Instructions for definition can be found in ["Defining Headers and Footers for Exported Documents" on page 638](#).

The simplest way to add an 'export ready' placeholder to a header or footer is to follow steps 1-6 listed in ["Adding a Placeholder to a Chapter or Requirement" on page 274](#) and then to copy the placeholder into the header or footer.

For example, create the placeholder ###Document Modified By### in the document text, cut it from the text, place it into a Header or Footer and Save.

Available Document Placeholders

The following document placeholders are available:

Placeholder	Description
Document Category	The name of the category the document resides in, e.g. <i>Maintenance</i> .
Document Category Path	The full path of the category the document resides in, e.g. <i>RMDEMO\Support\Maintenance</i> .
Document Chapter Count	The number of chapters in the document.
Document Created At	The date or date and time the document was created. For information on how to format date placeholders, see chapter "Specifying a Format for Date Placeholders" on page 276 .
Document Created By	The name of the user who created the document. The format depends on the display setting for user attributes (see chapter "Display Settings for User Attributes" on page 75).

Placeholder	Description
Document Modified At	The date or date and time of the most recent modification of the document. For information on how to format date placeholders, see chapter "Specifying a Format for Date Placeholders" on page 276 .
Document Modified By	The name of the user who made the most recent modification of the document. The format depends on the display setting for user attributes (see chapter "Display Settings for User Attributes" on page 75).
Document Owner	The name of the user who owns the document. The format depends on the display setting for user attributes (see chapter "Display Settings for User Attributes" on page 75).
Document Requirement Count	The number of requirements in the document.
Document Revision Number	The revision number of a snapshot (e.g. 1.2). For documents, the revision number is always 0.0.
Document Revision Number (Major)	The major part of the revision number of a snapshot. If the revision number is 2.1, the major part would be 2. For documents, it is always 0.
Document Revision Number (Minor)	The minor part of the revision number of a snapshot. If the revision number is 2.1, the minor part would be 1. For documents, it is always 0.
Document Title	The name of the document
	<i>The following placeholders will only hold data if Workflow has been assigned to the document.</i>
Document Workflow	The name of the workflow assigned to the document.
Document Workflow State	The state of the document in the workflow. .
Document Workflow State Reached At	The date or date and time the document reached the current state in the workflow. For details concerning date format, see "Specifying a Format for Date Placeholders" on page 276 .
Document Workflow Transition History	For all or for a selected transition: the date or date and time the document reached the state in the workflow. For details concerning date format, see "Specifying a Format for Date Placeholders" on page 276

Specifying a Format for Date Placeholders

Date placeholders can be formatted to display certain dates. Due to a limitation of Microsoft Word, the format has to be specified with the placeholder in the HTML of the chapter description or text attribute.

The following table shows the supported format specifiers. All examples assume the following date/time: September 1, 2008 14:03:04

Format	Description
d	Single-digit day (if possible). Example: 1
dd	Two-digit day: Example: 01
ddd	Abbreviated name of the day. The name depends on language setting on the server. Example: Mon
dddd	Name of the day. The name depends on language setting on the server. Example: Monday
M	Single digit month (if possible). Example: 9
MM	Two-digit month: Example: 09
MMM	Abbreviated name of the month. The name depends on language setting on the server. Example: Sep
MMMM	Name of the month. The name depends on language setting on the server. Example: September
y	Single-digit year (if possible). Example: 8
yy	Two-digit year Example: 08
yyyy	Four-digit year. Example: 2008
h	Single-digit hour (if possible) in 12 hour format. Example: 2
hh	Two-digit hour in 12 hour format. Example: 02
H	Single-digit hour (if possible) in 24 hour format: Example: 14
HH	Two-digit hour in 24 hour format: Example: 14
m	Single-digit minute (if possible). Example: 3
mm	Two-digit minute. Example: 03
s	Single-digit second (if possible). Example: 4
ss	Two-digit second. Example: 04

Format	Description
a	AM/PM specifier. Actual values depend on system setting. Default: AM and PM
p	AM/PM specifier. Actual values depend on system setting. Default: AM and PM

To specify or change the format for a date placeholder, do the following:

- 1 Click into the description or text attribute that holds your placeholder.
- 2 In the Rich Text editor, select **Source code** from the **Tools** menu.
- 3 Locate the date placeholder for which you want to specify the format.
Example:

```
<a target="_blank" class="rmPlaceholder" data-rmplaceholderformat="" data-rmplaceholderfriendlyname="Document Created At" data-rmplaceholdername="rmDocumentCreatedAt">###Document Created At###</a>
```
- 4 Modify the data-rmplaceholderformat attribute to your desired format.
Example:

```
<a target="_blank" class="rmPlaceholder" data-rmplaceholderformat="MMMM/dd/yyyy hh:mm:ss" data-rmplaceholderfriendlyname="Document Created At" data-rmplaceholdername="rmDocumentCreatedAt">###Document Created At###</a>
```
- 5 Click **OK**.
- 6 When using the Entire Document View or creating a new requirement, click **Save**.
With the **New Chapter** or **Edit Chapter** dialog, click **OK**.
With the **Edit Attributes** dialog, click **Save** or **Update**.

Using Comments in Documents

Comments can be added to chapters, free-form text, or requirements within documents. Comments allow users to discuss topics within the context of the document, and to track their review and approval as the document is prepared for distribution.

All Comments associated with requirements added to a document, no matter when or how the Comment was created, are listed in the **Document Comments Dialog**. This is an excellent dialog from which to review, incorporate, accept or reject stakeholder comments.

This section discusses:

[Adding and Replying to Comments in Documents](#)

[The Document Comments Dialog](#)

Adding and Replying to Comments in Documents

Adding a Comment

From within an open document, comments can be created and associated with a requirement, a chapter or free-form text within the document by executing the steps below.

To add a comment in a document, do the following:

- 1 Open the desired document.
- 2 Expand the **Comments** set in the **Actions** pane.
- 3 Select the chapter, requirement or text to which you want to add the comment.
- 4 Click **+**.

Depending on the attributes included in the comment class, a Subject may be required, or there may only be a blank line opened in the expanded Comment Pane.

- 5 Enter your comment and click **Save**.
- 6 The comment is immediately available for review or modification.

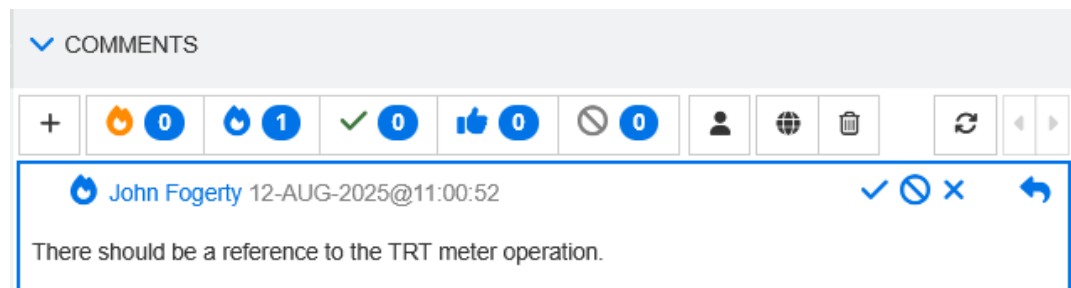


Figure 4-18. The New Comment is displayed in the Comment Pane.

Replying to a Comment

For instances in which notifications have been activated, users will be notified when a colleague responds to a comment they have initiated. If notification is via Browser, an alert will be raised in **Browser Notification Alerts** on the **Main Menu Bar**, otherwise an e-mail is sent.

In documents, you can quickly reply to a comment associated with a requirement or chapter by executing the steps below.

Reviewing document comments:

- 1 Open the desired document.
- 2 Select the Document Title at the top of the navigation pane.
- 3 Expand the **Comments** set of the **Actions** pane.
 - All comments to requirements and/or text are listed in the Comments pane.
 - Selecting a Comment will cause its source to be highlighted

4 Select a Document Chapter or Sub-Chapter.

- Deselect **Show all Comments** icon: 
- Only those comments to requirements and/or text contained within the selected object will be listed in the comments pane.

5 The Review Process:

- The reviewer may apply the suggestion, and mark the comment as incorporated.
- The reviewer may reject the suggestion.
- The reviewer may post a reply as to the validity, or to the possibility of additional clarification required.

For complete details concerning:

- ["Comment State Icons:" on page 280](#)
- ["The Dialog Header" on page 280](#)

Comment State Icons:



New: The current user has not read this comment.



Read: This comment has been read by the current user, but no further action has been taken.



Done: This comment has been reviewed and then incorporated into the chapter text or requirement.



Accepted: The incorporated comment has been reviewed by the requirement owner and accepted.



Rejected: This comment has been rejected.

The Dialog Header

The Header provides functions to Add new Comments, as well as to limit the comments displayed.



Add Comment: Opens a text input field at the end of the comment list. The comment will be associated with a selected requirement or document text.

To confirm your comment, click **Save**.

To discard your comment, click **Close**.

Filtering: Buttons for the Comment States: **New, Active, Done, Accepted,** or **Rejected** are listed across the top. Highlighting a button will limit the selection to that state.

The number of comments contained in each state is listed with the state.



Show My Comments: By clicking this icon, comment threads in the document that the current user participated in are listed.



Show All Comments: Toggles between All Comments and Chapter Comments

Click this icon to list all comments in the document.

Click the icon again to list comments contained in a selected chapter, sub-chapter, or requirement.

 **Show Deleted Comments:** Displays comments created against **content subsequently removed** from the document (not available for snapshots).

Click this icon to list comments that belong to requirements or chapters that were removed from the document.

 **Refresh:** Reloads the comment list.

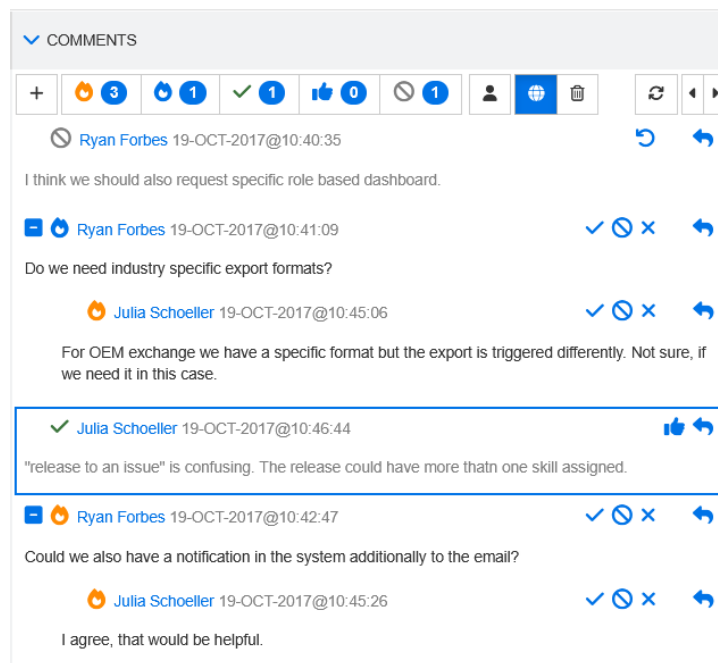
 **Previous Comment:** Selects the previous comment in the list.

 **Next Comment:** Selects the next comment in the list.

The Document Comments Dialog

All comments associated with document text or requirements can be reviewed from the comments dialog.

To open the Comments Dialog: Select Comments from the Actions pane of an open document.



Comment Management:

The process used to track comments is left to the team, we have provided a set of icons and examples of how they might be applied.

- 1 A comment is raised against a requirement or chapter text.
- 2 In review, possibly by the author of the requirement or chapter text, the comment is either rejected or a reply is added indicating validity with information relating to its incorporation.
- 3 The comment text is incorporated.
- 4 If the team is including an additional review process for modified document text, the incorporated comment is reviewed and accepted.

The following functions are available for use in the Comment Review Process:

-  **Incorporate:** Checking the check indicates that the comment has been reviewed and incorporated into the text.
-  **Accept:** This function is only available if the Instance Administrator has configured the instance to enable the Accept function (see **Comments**, in the "Requirements Settings" on page 74).
Before a Comment can be Accepted, it must be incorporated. It is expected that the user who created the Comment will review and Accept the change. If a user other than the author of the comment chooses to mark the incorporated comment as Accepted a message is raised in the Accept dialog: *This is a step which should be done by the author of the comment. Please confirm that you are confident that the author is ok with accepting this comment.*
-  **Reject:** Rejects the comment.
-  **Delete:** Deletes the comment. You can only delete a comment if it matches the following conditions:
 - You are the author of the comment.
 - No user has replied.
-  **Reply:** Adds a new comment as a reply. The text box to enter the comment is created within the comment.
To confirm your reply, click **Save**.
To discard your reply, click **Close**.
-  **Show Replies:** Shows the replies within the comment.
-  **Hide replies:** Hides the replies for the comment.
-  **Select User:** When typing the @ sign in a comment, a list is shown from which you can select users. If your administrator configured the notification service, users included in a comment will be notified.

Document Snapshots

Creating a Snapshot of a Document

A snapshot is a read-only copy of a document. It preserves the current state of the document for future reference. While creating a snapshot, you can also create a baseline of the requirement versions contained in the document.

The snapshot creation also saves the settings specified in the **Properties** dialog.

To create a snapshot of a document:

- 1 Create snapshot may be initiated from an open or closed document.
 - From an open document Click **Create/View Snapshots** in the Documents set of the Actions pane.
 - From Home View, Documents tab, select a document and click **Create Snapshot** from the Document group in the Actions pane.
- 2 The **Snapshots** dialog opens.

- 3 Click the **New Snapshot** button. The **Create Snapshot** dialog opens.
- 4 **Name:** Initially this field will contain the name of the original document. Modify it as needed.
- 5 **Major version** and **Minor version:** Increase the version number snapshot name. Any modifications will be overwritten.
Example:
Assuming the snapshot version is 1.1:
 - **Major version** will increase it to 2.0.
 - **Minor version** will increase it to 1.2.
- 6 **Description:** Initially this field will contain the description of the original document. Modify it as needed.
- 7 **Workflow:** Allows the selection of the workflow to be used with this snapshot.
- 8 **Automatically create corresponding Baseline:** Enable this checkbox if you want to create a baseline of the requirement versions currently in the document.
- 9 Click the **OK** button in the **Create Snapshot** dialog.
- 10 Click the **Close** button in the **Snapshots** dialog.

See ["Working with Snapshots" on page 283](#) for additional details.

Working with Snapshots

Snapshots can be accessed from within an open document, or a snapshot can be highlighted and accessed from the Document set of the Actions pane.

To access a snapshot associated with an open document follow these steps:

- 1 With the document open in the Document work page, click **Create/View Snapshots** in the Documents group of the Actions pane. The **Snapshots** dialog opens.
- 2 Select the desired snapshot from the list.

To access the snapshot related to a closed document:

- 1 Select the document owned by the snapshot in the **Documents** tab of the Home page.
- 2 Expand the document to allow selection of the snapshot.
- 3 Select the desired snapshot from the list.

The usual Document Actions are also available for Snapshots, including:

- **Open:** A snapshot can be selected and opened in the Document work page.
Once opened, document settings including the document name, description may be modified. A workflow may be assigned to a snapshot.
- **Save As:** A snapshot may be saved under a new name as a working document based entirely on the contents of the selected Snapshot.

- **Export:** The snapshot contents may be exported (see ["Exporting Documents" on page 287](#)).
- **Delete:** The snapshot may be marked as Deleted.
- **Remove:** This opens the **Remove Snapshot** dialog. Click **OK** to delete the snapshot.

Comparing Documents and Snapshots

Users can compare the current release of a document with a previous release, a snapshot or another document that may or may not share a basis. Differences are flagged. It is not required for the snapshots to be of the same document. The differences are summarized and flagged in the Navigation and Detail panes.

The following discusses how to select and compare two documents. For related dialogs, see:

- ["Working with the Compare Document Navigation Pane" on page 285](#)
- ["Working with the Difference Summary" on page 286](#).

To compare documents and snapshots:

- 1 From the Home View, select the category containing the objects to be compared.
- 2 From the Documents tab, select the document or snapshot to be compared.

Snapshots often reside in the same category as the document from which they were created. Expand the current document version to allow selection of a snapshot.

- 3 Click **Compare Document** in the **Documents** group of the Actions pane. The **Compare Documents** dialog opens.

4 Select a document or snapshot by using one of these methods:

- **Select a snapshot of the same document:**

- 1 Select the snapshot in the list below.
- 2 Click the arrow next to **Base Version** or **Changed Version** to populate the respective field.

- **Select a different document:**

- 1 Click ... to open the **Select Document** dialog.
- 2 If the document resides in a different category, select it from the **Category** box.
- 3 Select the document from the list below. You can shorten the list by typing parts of the name into the **Search** box.
- 4 Click **Select**.

- **Select a different snapshot:**

- 1 Click ... to open the **Select Document** dialog.
- 2 If the document resides in a different category, select it from the **Category** box.

- 3 Select the document from the list below. You can shorten the list by typing parts of the name into the **Search** box.
 - 4 Click **Select**.
 - 5 Select the snapshot from the list below.
 - 6 Click the arrow next to **Base Version** or **Changed Version** to replace the document name with the snapshot name.
- 5 Click **Compare**. This closes the **Compare** dialog and compares the selected document(s) and/or snapshot(s).

This results in the Navigation pane of the Document work page displaying the union of all of the chapters in the selected document(s) and/or snapshot(s). The detail pane contains a **Requirement Difference Summary**.

Working with the Compare Document Navigation Pane

When comparing a document:

The Navigation pane of the Document work page contains the union of all of the chapters in the selected document(s) and/or snapshot(s).

The detail pane contains a **Requirement Difference Summary**

The Navigation pane has these functions:

Title: Lists first the latest (**Changed**) document information and then the Base. For example: "**Changed:** ALM Design Specification 3.2 **Base:** ALM Design Specification 3.1

Difference Summary

Icons in the Navigation pane indicate the modification status of a given chapter or requirement.

Chapters

- : The chapter is unmodified.
- : The chapter has been modified.
- : The chapter has been added.
- : The chapter has been removed.

Requirements

- : The requirement is unmodified.
- : The requirement has been modified.
- : The requirement has been moved.
- : The requirement has been added.
- : The requirement has been removed.

At the chapter level, the change icons account only for the chapter description, not for the requirements in the chapter. Therefore, if a description of a chapter did not change, but subchapters or requirements in the chapter changed, the chapter icon indicates that the chapter is unchanged.

If the title of a chapter or requirement is different in the two documents, both titles are displayed in the Navigation pane.

When a chapter is selected in the Navigation pane, the Detail pane shows requirements in the grid view.

The attributes displayed are those defined for display in the document. See ["Display Options Tab" on page 247](#).

Additional Notes:

The icon that indicates requirement modification is also shown in the grid view.

When selecting a modified requirement in the Navigation pane:

The Detail pane shows the differences between the two versions.

An icon is displayed next to the sections in the Detail pane that include changed attributes,

The sections that include changed attributes are expanded.

The comparison is relative to the base version, especially for moved requirements (requirements that have been added and removed as a result of a drag-and-drop operation).

For additional information concerning the difference summary see ["Working with the Difference Summary" on page 286](#).

Working with the Difference Summary

The **Requirement Difference Summary** sits at the top of the Navigation pane, providing access to the overview of changes for each object in the documents or snapshots compared.

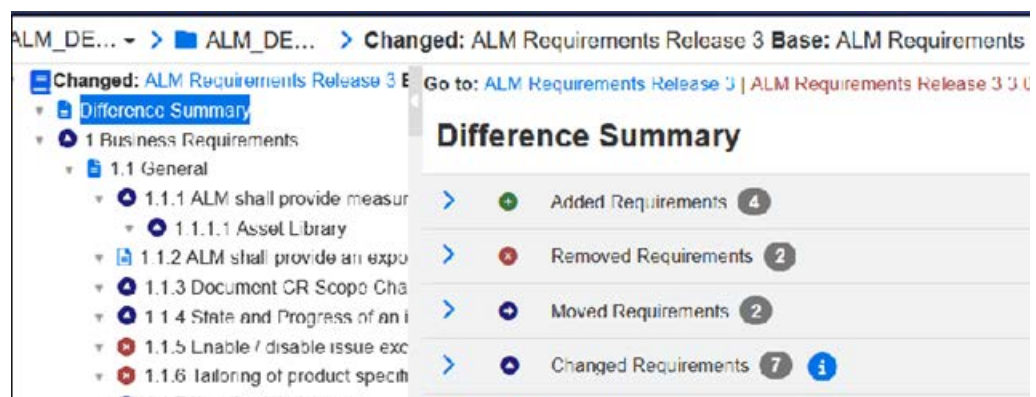


Figure 4-19. A Summary of object differences with the ability to open either version.

The **Requirement Difference Summary** contains the following:

Added Requirements: Contains a list of requirements that have been added to the document or snapshot.

Removed Requirements: Contains a list of requirements that have been removed from the document or snapshot.

 **Moved Requirements:** Contains a list of requirements that were already present in the base document or snapshot, but changed the position (e.g. by moving to a different chapter).

 **Changed Requirements:** Contains a list of modified requirements present in both the base document and snapshot.

 Click the Information icon to raise the [Change Requirements Dialog](#)

 **Unchanged Requirements:** Contains a list of unmodified requirements, that were already present in the base document or snapshot.

Change Requirements Dialog

This dialog can list all changes to objects between the base and modified versions, or allow the user to select the objects display based on the attributes modified.

Use Instance Settings: As with most RM dialogs, it is possible to **Use Instance Settings**, which, in this dialog, consists of all attributes included in the document.

Show all attributes: Choose this button to list all modified objects, displaying each attribute modified.

Show Selected Attributes: Choose this button to **list only those objects with selected attributes modified**. For example, show only those requirements with changes to the description.

User Settings: Choose the class, and from the Available Attributes, select and use the arrow to move to the right those changes you wish to be included in the listed objects.

Click **Save** to save the settings, they will be available when next you use Compare Documents.

Export: The **Export** button exports the list showing Old Values, New Values and Differences..

Viewing a Snapshot or Document

You can view the individual snapshot or document from the "compare" version of the Document work page.

To view a snapshot or document from the "compare" version of Documents View:

Click a document or snapshot link next to **Go to:** at the top of the Detail pane.

The normal work page of the document or snapshot is displayed.

Because snapshots are read-only, their chapters, subchapters, and requirements are dimmed in the Navigation pane.

Exporting Documents

Dimensions RM Documents can be maintained throughout the release process and exported using templates based on corporate formats or as simple collections of objects collected for review.

Document exports can be run in background, with access to status. In addition, Functionality from the docx4j Java Library can be used to support the export of DOCX files. The following list provides the available export types

Documents can be exported from Dimensions RM as any one of the following:

- Word Document Export (including Java): ["Export as a Microsoft Word Document" on page 288.](#)
- To export as a Roundtrip Document: ["Export as a Roundtrip Document" on page 290.](#)
- To export as PDF Document: ["Export as an Adobe PDF Document" on page 290.](#)
- To export as **Excel Spreadsheet**: ["Export as a Microsoft Excel Spreadsheet" on page 291.](#)
- To export in ReqIF format: ["Export as a ReqIFZ Document" on page 292](#)

Additional Document Export Related features:

- ["Viewing Attachments in the Exported Document" on page 289](#)
- ["Copying the Export URL of a Document to the Clipboard" on page 293](#)

Run in Background:

The document export can be run in background. simply check the box at export and the export will be performed in the background while you continue to work. With this new function comes a new Action:

Export History Provides access to the export status.

Export as a Microsoft Word Document

To export to a Microsoft Word file:

- 1 Select **Export** from the Documents group of the Actions Pane
Export may be selected when highlighting a document from the **Documents Tab** on the Home View, or from an open document or snapshot
- 2 Export Document as:
Microsoft Word Document.
Java (Beta)
Generate TOC page numbers: If exporting using Java, check this box if the output should include page numbers.
- 3 **Run in Background:**
Check this box if the export process should be run in background. This can be particularly useful when exporting large files.
When choosing to Run in Background, you may check status using the **Export History** Action from the Documents group of the Actions Pane.
- 4 Click on **Export**.

About exporting Documents in Word Format:

The RM document name becomes the name of the Word file.

If the Export Title box is checked, the RM document name appears as the title of the Word document.

The Navigation pane becomes the Word Document Table of Contents.

The content and layout in the Detail pane define the body of the Word document



NOTE About Microsoft Word Installation

If Microsoft Word is **not installed** on the server, and the Word (Office) is selected Microsoft Word documents are created with file extension .doc instead of .docx. When opening a .doc file, you might receive a message informing you that this file is not in correct docx format. You can safely click **Yes** in the dialog box and the file will open in Word, then save the file in docx.

When the .doc file is created, all links in the Table of Contents point to page number one. To correctly number the entries in the Table of Contents, right-click the Table of Contents and select **Update** in the context menu.

Viewing Attachments in the Exported Document

If requirements in the document contain file attachment attributes, they can be included as links in the exported Word document. To see the links, you must add the File Attachment attribute to the **Attributes to Display** list in the **Document Settings** dialog box. For information about this dialog box, see ["Display Options Tab" on page 247](#).

The links are displayed as icons. Double-click the icon in the exported document to open the associated file.

The following illustration shows the file attachment links in an example exported in grid format; the display is similar in paragraph format.

#	Rqmt ID	Title	Text	File Attachment
3.1.3.1	MRKT_000001	EPhoto will be an online photo album	The ePhoto system shall enable the user to browse an on-line photo album. It shall look and feel like an electronic photo album, just like the one on the coffee table.	no file attached

#	Rqmt ID	Title	Text	File Attachment
3.1.3.1.1	MRKT_000024	Stored photo slideshows	The ePhoto system shall provide the capability to create a slide shows of stored photos.	 prototype.png
3.1.3.1.2	MRKT_000023	EPhoto will be an online photo album	The ePhoto system shall enable the user to browse an on-line photo album. It shall look and feel like an electronic photo album, just like the one on the coffee table.	 prototype.png

Export as a Roundtrip Document

If you want to give a Word Document to someone for external editing and later import the changes, you might want to use a Roundtrip document instead of a standard Word document. The difference between a Roundtrip document and a regular Word document is that the Roundtrip document uses a defined format on the exported requirements, and specifies IDs to chapters and the document header. These IDs - as well as the IDs in the requirements - allow recognition of changes during import.

To export to a Roundtrip document:

- 1 Select **Export** from the Documents group of the Actions Pane
Export may be selected when highlighting a document from the **Documents Tab** on the Home View, or from an open document or snapshot
- 2 Export Document as:
Select **Roundtrip Word Document (*.docx)**.
- 3 **Run in Background:**
Check this box if the export process should be run in background. This can be particularly useful when exporting large files.
When choosing to Run in Background, you may check status using the **Export History** Action from the Documents group of the Actions Pane.
- 4 Click on **Export**.

Export as an Adobe PDF Document



NOTE

Attachments cannot be embedded into a PDF document.

You can export an RM document or snapshot as an Adobe PDF file from the **Document View**.

The RM document name becomes the name of the PDF file.

If the Export Title box is checked, the RM document name appears as the title of the PDF document.

The Navigation pane becomes the PDF Document Table of Contents.

The content and layout in the Detail pane define the body of the document

To export to an Adobe PDF file:

- 1** Select **Export** from the Documents group of the Actions Pane
Export may be selected when highlighting a document from the **Documents Tab** on the Home View, or from an open document or snapshot
- 2** Export Document as:
Select **PDF Document**
- 3** **Run in Background:**
Check this box if the export process should be run in background. This can be particularly useful when exporting large files.
When choosing to Run in Background, you may check status using the **Export History** Action from the Documents group of the Actions Pane.
- 4** Click on **Export**.

Export as a Microsoft Excel Spreadsheet

You can export an RM document or snapshot as a Microsoft Excel file from the **Document View**.

The **RM document name** becomes the name of the Excel file.

The content and layout in the Detail pane define the cell contents of the Excel spreadsheet.

To export to a Microsoft Excel file:

- 1** Select **Export** from the Documents group of the Actions Pane
Export may be selected when highlighting a document from the **Documents Tab** on the Home View, or from an open document or snapshot
- 2** **Export Document as:**
Select **Excel Spreadsheet**
- 3** **Select Options:**
Include images: If selected, images are exported into the Excel file.
Include Tables: If selected, tables are exported in the Excel File.
Export all displayed attributes: If selected all attributes selected in the Attributes to Display list (see chapter "[Display Options Tab](#)" on page 247) are exported into the Excel spreadsheet. If this option is clear, only Document Section Identifier, Chapter Title, Title and Description attributes are exported into the Excel spreadsheet.
- 4** **Run in Background:**
Check this box if the export process should be run in background. This can be particularly useful when exporting large files.
When choosing to Run in Background, you may check status using the **Export History** Action from the Documents group of the Actions Pane.

- 5 Click on **Export**.

Export as a ReqIFZ Document

One or more RM documents or snapshots can be selected and exported as a ReqIFZ document file from the **Document View**.

The ReqIFZ file name:

When exporting a single file, the ReqIFZ file name is the document name.

When exporting multiple files the ReqIFZ file name is: export.reqifz. The files are managed as ReqIF Documents.

Numeric Attributes:

Implicit Numeric Attributes (e.g., Version ID) are exported as integers.

All other Numeric Attributes are exported as real numbers.

Title and Description are stored as ReqIF.Name and ReqIF.Description values.

Attachments cannot be embedded into a ReqIFZ document



NOTE Values Exported with ReqIFZ

The maximum length for Alphanumeric attributes as well as the Min, Max values for Numeric attributes are exported with ReqIFZ Export.

To export to an ReqIFZ file:

- 1 From the **Home View**, **Documents tab** select one or more Documents
Note that the **Export** action may also be selected from within an open document.
- 2 Select **Export** from the Documents group of the Actions Pane
- 3 Export Document as:
Select **ReqIF Document (*.reqifz)**.
- 4 **DOORS Support for image export** option
Select this option to convert images for import into DOORS.
If this option is clear, images are exported in their original format.
- 5 **Run in Background:**
Check this box if the export process should be run in background. This can be particularly useful when exporting large files.
When choosing to Run in Background, you may check status using the **Export History** Action from the Documents group of the Actions Pane.
- 6 Click on **Export**.

Copying the Export URL of a Document to the Clipboard

If you need a document to be exported in a specific format frequently, you can simplify that task by storing a Export URL of that document in your web browser. Clicking the Export URL will then export that document (e.g. in PDF format) and allow you to open or save it (depends on your web browser settings).

To copy the Export URL of a document:

- 1 Open the document or snapshot to the Document work page,
For assistance see ["Opening Documents or Snapshots" on page 213](#).
- 2 Click **Export** in the **Documents** group of the **Actions** pane.
- 3 At the **Export Document** prompt, select the export format from the drop-down.
- 4 Click **Create direct URL** to opens the **Direct URL** dialog.
- 5 Right-click the URL and select **Copy link address** to copy the URL to the clipboard.
- 6 Click **Close** to close the dialog.
- 7 Press **Ctrl + V**, or the relevant application-specific menu command to paste the URL into the file or application where you wish to use it.
- 8 If Security allows, add User Name and Password to the URL
`&u=user_name&pwd=password`

Chapter 5

Working with the Home View

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About the Home View

To open the Home View, select Home from the Main Menu Bar.

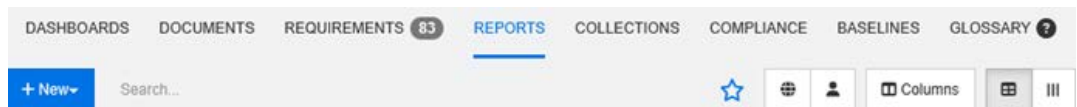


From the Home View users may select and execute dashboards or access objects listed by type: Documents, Requirements, Reports, Collections, Baselines, Boards, Risks, Compliance, or Glossary entries.

For details concerning settings, including the selection of tabs relevant to your needs, see ["Home Settings" on page 73](#)).

Home View Tabs:

The Home View tabs selected for display depend on the implemented process and settings. Beyond those listed below Boards and Risk Tabs may also be available.



Click the Help icon  to access help for the selected tab.

The Home View Content

Search: This field limits the display in the active tab to those items that match the search string. The search is dynamic, and increasingly narrows the displayed results as you enter more characters. To return to displaying all items, delete the string from the Search field or click the **X** in the search box.

Tabs: Once a tab is selected, the number of items in that tab will be displayed.

- **The Requirements Tab** provides special features for selection and inline editing. In the Home View Requirements Tab:

single-click attribute cells to edit,

double-click to open

check the box to select one or more before choosing an Action

For details ["Requirements Tab" on page 318](#)

- **Report and Container Tabs:** Double-click a listed item to open it or select an item and then click an action from the Actions pane.

- **Drag-and-Drop:** Select a document and drag it into a different Category.



NOTE The Selected Category

Note that the number posted and the items listed is always dependent on the currently selected Category together with the state of the folder on the Category panel.

When the folder is open:  the objects in subcategories are included.

When the folder is closed:  only the objects in the selected category are included.

This selection is intended to allow users to view content and status on a subset of requirements, on a full component or in the whole instance.

This is a user setting and will remain as you left it.

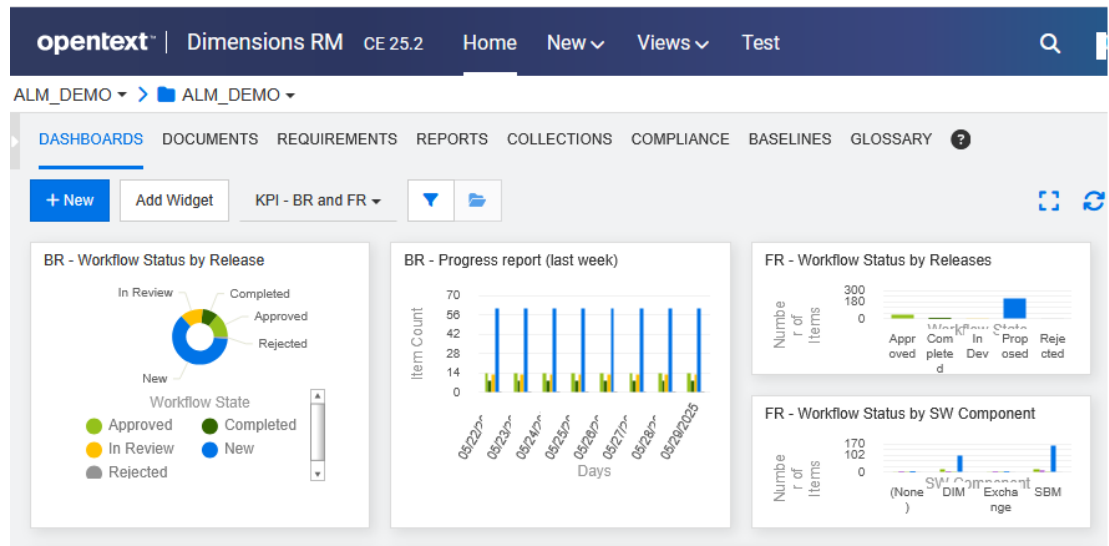
The Home View Tabs:

Tab Name	Description
Baselines	The Baselines tab allows you to create, open, delete, and modify baselines. For details, see chapter " Baselines Tab " on page 327.
Boards	The Boards tab allows you to create, modify, and delete boards for viewing Kanban reports. For details, see chapter " Boards Tab " on page 310.
Collections	The Collections tab allows you to create, open, delete, and modify collections. For details, see chapter " Collections Tab " on page 325.
Compliance	The Compliance tab allows users to define what it means to be compliance within a given project or release based on Scope and Rules defined. For details, see " Compliance Tab " on page 315.
Dashboard	The Dashboards tab allows you to create, modify, delete, and export dashboards. For details, see " Dashboards " on page 298.
Documents	The Documents tab allows you to create, open, delete, and export documents. For details, see " Documents Tab " on page 316.
Glossary	The Glossary tab allows you to create, edit, and delete glossary entries. For details, see chapter " Glossary Tab " on page 327.
Reports	The Reports tab allows you to create, open, edit, and delete reports and export the report results. For details, see chapter " Reports Tab " on page 323.
Requirements	The Requirements tab allows you to create, edit, delete, and export requirements. For details, see chapter " Requirements Tab " on page 318.
Risks	The Risks tab provides access to the latest information concerning problems identified, and their mitigation status. For additional information see " Risks Tab " on page 312.

Dashboards

The RM Dashboard was designed to provide product and project teams with an overview of performance and release status using information managed within RM.

Each Dashboard is comprised of graphical and text-based widgets, configured using RM reports, and designed to help users monitor, analyze, and manage their status. Team and Project Leads can create an unlimited number of dashboards, configuring each to address key process indicators or to report status specific to a project team.



This Section includes:

- Using the My Work for a Dashboard Overview

An introduction to the creation and application of dashboards, see: ["Using Dashboards with My Work" on page 299](#)

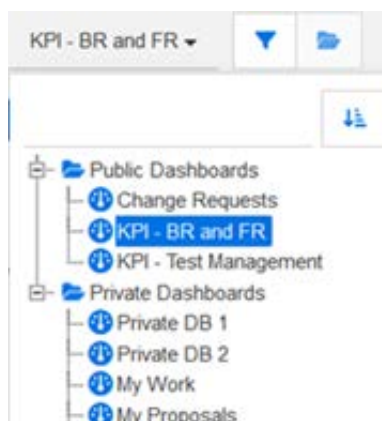
- ["Using Dashboard Widgets" on page 302](#)
- ["Creating a Dashboard" on page 302.](#)
- ["Adding a Standard Report to the Dashboard" on page 305](#)
- ["Adding a Graphical Report to the Dashboard" on page 305](#)
- ["Using Reports with Runtime Parameters" on page 306.](#)
- ["Adding a Calendar Report to the Dashboard" on page 306](#)
- ["Adding a Website to the Dashboard" on page 307](#)
- ["Exporting a Dashboard" on page 307](#)
- ["Creating a Dashboard URL" on page 308](#)
- ["Setting Default Dashboards" on page 308](#)
- ["Dashboard Maintenance" on page 309](#)

For an overview of all Tabs on the Home View, see:

Using Dashboards with My Work

The **Dashboards** tab is located on **Home View**. The executed Dashboard will default to the last one selected or the Dashboard selected as the default for the selected category if one has been set (see ["Setting Default Dashboards" on page 308](#)).

To choose an alternate dashboard select one from the drop-down to the left of the Funnel and Folder icons.



Users may modify the order of the Dashboards listed or create a new group to hold those Dashboards most often executed (see ["Sorting or Grouping Dashboard Entries" on page 299](#)).

Users may create a Private Dashboard using predefined reports, or by supplementing **"My Work"** reports to track progress on assigned objects, or on projects they are interested in. This is an excellent way for new users to become familiar with dashboard creation, configuration and execution (see ["My Work - Predefined Reports available to every user" on page 300](#))

Sorting or Grouping Dashboard Entries

To Group and/or Sort Dashboard Entries

Click the  at the top of the drop-down. From this dialog:

- 1 New Groups** can be created by highlighting either Public or Private Dashboards, and selecting the **+**; the **—** will remove a group. Separate Groups allow teams to manage large numbers of dashboards by type or target audience.
- 2** The order of entries within either Public or Private Dashboards may be modified using drag-and-drop.

The Funnel and Folder Settings

The Funnel and Folder Settings applied to the Dashboards, Boards, and Risks Tabs control the objects processed to produce the results.

The default is to gather data from the instance, i.e., all categories in the tree. However, the data source can be modified using the Funnel and Folder settings.

Choice	Description
	If neither funnel nor folder is selected (both showing white background), the reports are based on ALL data in the instance.
	If both funnel and folder are selected (both with dark background), the reports reflect the data in the selected category as well as its subcategories.
	If only the funnel is selected (funnel dark, folder white background), the reports reflect the data in only the selected category, without including data in any subcategories.

It is possible for reports to be created with category constraints. For example, a user may restrict a report (using the [Attribute Constraints Tab](#)) to one or more specific categories. **Such constraints will take precedence over the filter and funnel category selections.**

My Work - Predefined Reports available to every user

The My Work dashboard is a dashboard containing predefined reports; this is an excellent way for new users to become familiar with Dashboards.

The following report widgets are available, by default, in the **My Work** dashboard, however, users may modify content to include any report to which they have access. This section is intended to provide users a personal dashboard listing objects assigned to them or those they are interested in.

Any report, text or graphical, can be added to the **My Work** dashboard.

Proposals

The section lists proposals create or updated by any user. It executes a report name: Proposals. The Proposals section is included only if the process implemented includes uses the Actions **Propose New** or **Propose Change**. See "[Submitting a Change Request](#)" on page 136.

Recent Comments

Lists comments that were added, created or updated by any user within the specified time frame.

Recently Changed Requirements

Lists requirements that have been modified or created by any user within the specified time frame.

Recent Polls

Lists polls that meet the specified conditions within the specified time frame.

To create the My Work dashboard, execute these steps:

- 1 From the Home View, click on the **Dashboards** tab

- 2 Click the **+ New** button under the Dashboards tab or click **New** from below **Dashboard** in the **Action** pane. This opens the *New Dashboard* dialog.
- 3 Enter the **Title** of the dashboard, for example: My Work
- 4 Choose the Dashboard layout, the three horizontal levels for example.
The assumption is that each gray block included in the selected layout will be populated with a report widget of any type. The format is malleable, a dashboard can be expanded, widgets can be moved or resized (see ["Using Dashboard Widgets" on page 302](#)).
- 5 Click the **Configure** link in the top section. This opens the **Edit Widget** dialog.
Leave the Widget type at **Show a Report**
- 6 Choose a Title: "My Recently Changed Requirements" for example.
- 7 From the **Report Type** drop-down, select **My Work**.
- 8 Select an entry from the list of available reports of type **My Work**. In the example shown in [Figure 5-1](#) we have chosen **Recently Changed Requirements**
- 9 Click **Next**.
- 10 Choose the Categories relevant to your work. The requirements stored in the selected categories will be input to the report.
- 11 Enter the period to be used to define *Recent*. Do you want to list the requirements changed in the past week, two weeks or the past 30 days.
- 12 Click **Save**.

The My Work reports can be replaced with Public Graphical reports, or reports you create yourself. We recommend that you play with these reports, and practice with this Private Dashboard. Don't hesitate to make use of the Dashboard Widgets ([Using Dashboard Widgets](#)) to try a reconfiguration of your private space.

The screenshot displays a dashboard titled 'My Work' with two report widgets. The top widget, 'Inbox Product Requirements' (19 items), shows a table of product requirements with columns for Rqmt ID, Title, Workflow State, Priority, and Links. The bottom widget, 'Recently Changed Requirements' (6 items), shows a table of marketing requirements with columns for Category, Rqmt ID, Title, Text, Created, Modified By, Time, and Time Modified.

Rqmt ID	Title	Workflow State	Priority	Contain...	Links In	Links Out
PROD_000002	Application settings ...	Approved	High	ePhoto ...	1	2
PROD_000003	Default window size	Approved	Medium	User	1	2
PROD_000004	Expand image to ful...	Approved	High		2	3
PROD_000005	Remember last 5 im...	Approved	High	ePhoto ...	1	2
PROD_000006	Multiline annotations	Approved	Medium		1	2
PROD_000009	Create, Read, Updat...	Approved	High		0	1
PROD_000011	Annotations stored	Approved	High	User	0	1
PROD_000012	Ascii database	Approved	High		0	2

Category	Rqmt ID	Title	Text
Marketing_Requirements			This i system enabl user t brows line p album mann simila brows one c coffee
RMDEMO	MRKT_000001	online photo album	This i shall photo are 5

Figure 5-1. Example My Work Dashboard. Create your own and modify it.

Using Dashboard Widgets

The set of icons located at the top of each dashboard widget become clickable as you move the cursor across the title line of a report. The icons provide access to the following functions:



Chart Type: For graphical reports only, select an alternate chart type from the list available.



Configure: Opens the *Edit Widget* dialog. This dialog offers the same functionality as the *Add Widget* dialog. For further information refer to ["Adding a Standard Report to the Dashboard" on page 305](#), ["Adding a Graphical Report to the Dashboard" on page 305](#), or ["Adding a Website to the Dashboard" on page 307](#).



Fullscreen: Expands the report to fill the whole screen.



Refresh: Refreshes the data of the report. To refresh the data of all reports, click on **Refresh View** from the Dashboard Actions listed in the **Actions** pane.



Delete: Removes the report widget from the dashboard.

Moving Widgets

Report widgets can be moved freely within the selected dashboard.

To move reports:

- 1 Move the mouse pointer to the report you want to move.
- 2 Click and hold the mouse button on the report title
- 3 Slide the report to the new position.

Resizing Widgets

Report widgets can be resized to full screen by clicking the Fullscreen icon  in the report's title bar. The widgets can be resized to fill one or several tiles as follows:

- 1 Move the mouse pointer to the bottom right corner of the report to be resized. The mouse pointer changes to a double-arrow pointer.
- 2 Click and hold the mouse pointer on the corner. Move the mouse pointer to the intended size, you may push out neighboring widgets.

Creating a Dashboard

Dashboards intended for use in a specific category may be created and stored in that category although Dashboards intended to be accessed by all project teams should be stored at the root level, with **Show in Subcategories** checked making the Dashboard visible for selection throughout the instance.

Each Dashboard is populated with a set of report widgets gathered to report status on project data selected at run time.

To create a dashboard:

1 From the **Home View** and click on the **Dashboards** tab.

2 To open the New Dashboard Dialog:

Click the **+ New** button under the Dashboards tab or

Click **New** from below the **Dashboard** Set in the **Action** pane.

3 Enter the **Title** of the dashboard.

4 Choosing Public or Private Dashboard:

If your user account has the **Create Public** permission, you can create a **Dashboard** that all or selected groups may access.

Private is the default, and may be selected even if the goal is to create a Public Dashboard, once all widgets are working as expected.

Use **Edit** from the **Dashboard** set in the **Action** pane to edit a Dashboard. see "[Editing a Dashboard](#)" on page 309.

Public Dashboard: Select the Public Dashboard option to allow other users to access the dashboard. If this option is not selected, the Dashboard is **Private**, only the user who created the dashboard can access it.

Default Dashboard for Category: This option is only available if **Public Dashboard** is checked. If **Default Dashboard for Category** is selected, this dashboard is used when a user selects the category for the first time.

Visible for: This option is only available if **Public Dashboard** is selected. It allows you to choose which groups can access the dashboard. To give all users permission to access the dashboard, select **All**. The selected groups are marked with a check mark.

Editable for: This option is only available if **Public Dashboard** is selected. It allows you to choose which groups can edit the dashboard. To give all users permission to edit the dashboard, select **All**. The selected groups are marked with a check mark.

5 Category: Select the Category in which the Dashboard will be saved.

6 If **Show in Subcategories** is checked:

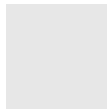
The dashboard can be accessed in all subcategories of the category in which it was saved.

If a Dashboard is saved in the root category, users who do not have access to root will be able to access the dashboard from subcategories to which they do have access.

7 Select one of the layouts listed.

The assumption is that each gray block included in the selected layout will be populated with a report widget of any type.

The format is malleable, a dashboard can be expanded, widgets can be moved or resized (see ["Using Dashboard Widgets" on page 302](#)).



Freestyle: Allows to add reports anywhere on the dashboard.



Tile 9: Creates a matrix of 3x3 tiles.



Tile 16: Creates a matrix of 4x4 tiles.



Horizontal 3: Creates 3 rows of identical size.



Horizontal 2: Creates 2 rows of identical size.



Horizontal 2/3: Creates 2 rows with the first to use about 2/3 of the dashboard.



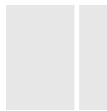
Horizontal 1/3: Creates 2 rows with the first to use about 1/3 of the dashboard.



Vertical 3: Creates 3 columns of identical size.



Vertical 2: Creates 2 columns of identical size.



Vertical 2/3: Creates 2 columns with the first to use about 2/3 of the dashboard.



Vertical 1/3: Creates 2 columns with the first to use about 1/3 of the dashboard.



Vertical 4: Creates 4 columns of identical size.

8 Click on **Save**.

Adding a Standard Report to the Dashboard

Standard reports show their data in a table. To create your own reports, see chapter ["Working with Reports" on page 333](#).

To add a standard report to the dashboard:

- 1 From Home View, click on the **Dashboards** tab.
- 2 Select a dashboard from the Dashboard list.
You may copy an existing Dashboard to test changes: "[• Copying a Dashboard" on page 309](#).
- 3 or create a dashboard as described in chapter ["Creating a Dashboard" on page 302](#).
- 4 Click on the **Add Widget** button under the Dashboards tab.
- 5 Ensure that the **Widget Type** box shows **Show a report**.
- 6 In the **Category** box, select the category in which the report is located.
- 7 Select a report:
Choose a Report Type or use the Filter to limit the list.
- 8 Once the report is selected, you may change the text in the **Widget Title** text box.
This does not affect the title of the selected report, which may be used by others.
- 9 If the selected report uses runtime parameters:
see chapter ["Using Reports with Runtime Parameters" on page 306](#).
- 10 Click **Save**.

Adding a Graphical Report to the Dashboard

Graphical reports show their data in with diagrams. To create your own graphical reports, see chapter ["Creating a Graphical Report" on page 338](#).

To add a graphical report to the dashboard:

- 1 Go to the **Home View** and click on the **Dashboards** tab.
- 2 Select a dashboard from the Dashboard list or create a dashboard as described in chapter ["Creating a Dashboard" on page 302](#).
- 3 Click on the **Add Widget** button under the Dashboards tab or click **Add Widget** from the **Dashboard** set of the **Action** pane. This opens the *Add Widget* dialog.
- 4 Ensure that the **Widget Type** box shows **Show a report**.
- 5 Select **Graphical** from the **Report Type** list.
- 6 In the **Category** box, select the category in which the report is located.
- 7 Select a report.
- 8 If you like, change the title of the report by changing the text in the **Widget Title** text box.

- 9 If the selected report uses runtime parameters, see chapter ["Using Reports with Runtime Parameters" on page 306](#).
- 10 Select the **Report Style** tab to select the style for the report.
- 11 Click **Save**.

Using Reports with Runtime Parameters

Some reports may require that you enter or select data when running the report. These runtime parameters must be included as the report is added to the dashboard. If a report has runtime parameters, a tab named **Parameters** appears next to the **Report** tab.

To enter or select Runtime Parameters:

- 1 Select the **Parameters** tab.
- 2 Enter a value or, for attribute lists, select one or more entries.

Adding a Calendar Report to the Dashboard

This report using 'My Work' reports objects modified by the current user. It is intended as a user tool, implemented to track progress.

The calendar report provides a listing of modified requirements in a selected class and category, displayed on a calendar. The report can be weekly or monthly.

To create a calendar report do the following:

- 1 From Home View, select the **Dashboards** tab.
- 2 Select a dashboard from the Dashboard list.
- 3 Click on the **Add Widget** from the Dashboard set of the Actions pane.
- 4 Ensure that the **Widget Type** box shows **Show a report**.
- 5 From the **Report Type** box, select **My Work**.
- 6 From the report list, select **Calendar**.
- 7 Click **Next**.
- 8 Select the categories in which you want to search for requirements.
- 9 From the **Requirement Class** box, select the requirement class to include in the result list.
- 10 From the **User Attribute** box, select a user attribute.
- 11 From the **Enter Start Date**, select the date on which reporting should start.
- 12 From the **Enter End Date**, select the date on which reporting should end.
- 13 From the **Enter View** options, select **Week** or **Month** to specify the display mode.
- 14 Click **Save**.

Adding a Website to the Dashboard

Instead of reports, you can also add websites to the dashboard. The websites must use the `http` or `https` protocol. Other protocols, e.g. `ftp` or `gopher` are not supported.

To add a website to the dashboard:

- 1 Go to the **Home View** and click on the **Dashboards** tab.
- 2 Select a dashboard from the Dashboard list or create a dashboard as described in chapter ["Creating a Dashboard" on page 302](#).
- 3 Click on the **Add Widget** button under the Dashboards tab or click **Add Widget** from the **Dashboard** set of the **Action** pane. This opens the *Add Widget* dialog.
- 4 Select **Show a website** from the **Widget Type** box.
- 5 Enter the URL to the website.



NOTE Transfer Protocol

The protocol (`http://` or `https://`) must be entered as a prefix to the URL, for example `https://www.opentext.com`.

Without the protocol the dashboard will display an error message instead of the website.

- 6 Enter a title for the website into the **Widget Title** text box.
- 7 Click **Save**.

Exporting a Dashboard

Dashboard can be exported to PDF or PowerPoint, non-graphical reports may be exported to excel, although we recommend selecting and exporting non-graphical reports individually.

Corporate templates may be used for Dashboard export, for details, see ["Creating Templates to Export Requirements" on page 636](#).

For Dashboards exported to PDF or PowerPoint:

Each Dashboard may be comprised of widgets, configured using graphical and text-based RM reports.

Dashboard export supports the export of **graphical** widgets into a PowerPoint presentation or an PDF document.

Text-based reports included in the selected Dashboard will be ignored. If a dashboard contains only graphical reports, an error is raised.

For Dashboards exported to Excel:

The contents of each non-graphical report will be exported to Excel in table format.

To export a dashboard, do the following:

- 1 From **Home View** select the **Dashboards** tab.

- 2 Select the dashboard you want to export from the Dashboard list.
- 3 Click **Export** from the **Dashboard** set on the **Action** pane.
- 4 Select the desired format from the **Export Dashboard to** list. The following formats are supported:
 - PowerPoint
 - PDF Document
 - Excel Spreadsheet
- 5 Click **Export**.

Creating a Dashboard URL

This action provides a facility for the creation and distribution of a URL that will produce a dashboard identical to that produced by the current user. Assuming permissions are in order, the dashboard content will be identical, including all category settings.

To create a direct URL, do the following:

- 1 From Home View, select the **Dashboards** tab.
- 2 Select the desired dashboard.
- 3 Click **Create direct URL** in the **Dashboard** set of the Actions pane.
- 4 Right-click the URL and select **Copy link address** to copy the URL to the clipboard.
- 5 Click **Close** to close the dialog.
- 6 To paste the URL into a file or message:
Use **Ctrl + V**, or the relevant application-specific menu command.

Setting Default Dashboards

When creating or editing a public dashboard, the Dashboard can be defined as the default dashboard for the selected category. As a result, this dashboard will be displayed when the category is selected by a user. Users may choose to reset the default to a another public Dashboard or to one of their own making.

Only a Public Dashboard may be set to the default for the category.

To edit a dashboard:

- 1 From Home View, click on the **Dashboards** tab.
- 2 Open the Dashboard to be edited.
- 3 Click **Edit** from the **Dashboard** set in the **Action** pane.
- 4 Modify the following:
Public Dashboard: Select the Public Dashboard option to allow other users to access the dashboard. If this option is not selected, the Dashboard is **Private**, only the user who created the dashboard can access it.

Default Dashboard for Category: This option is only available if **Public Dashboard** is checked. If **Default Dashboard for Category** is selected, this dashboard is used when a user selects the category for the first time.

- 5 Click **Save**.

For further information on creating or editing dashboards, see ["Creating a Dashboard" on page 302](#) or ["• Editing a Dashboard" on page 309](#).

Dashboard Maintenance

This section contains information about:

- [Copying a Dashboard](#) using Save As,
- [Editing a Dashboard](#)
- [Deleting a Dashboard](#).

• *Copying a Dashboard*

Users may initiate a new dashboard with the reports and properties of one already well tested.

To copy a dashboard:

- 1 From Home View, click on the **Dashboards** tab.
- 2 Select a dashboard from the Dashboard list.
- 3 Click **Save As** from the **Dashboard** set in the **Action** pane.
- 4 Enter a new **Title**.
- 5 Dashboard properties may be modified as required, see [Creating a Dashboard](#).
- 6 Click **Save**.

• *Editing a Dashboard*

Dashboard changes are history controlled, and can be viewed by selecting the History tab in the *Edit Dashboard* dialog.

To edit a dashboard:

- 1 From Home View, click on the **Dashboards** tab.
- 2 Open the Dashboard to be edited.
- 3 Click **Edit** from the **Dashboard** set in the **Action** pane. This opens the *Edit Dashboard* dialog.
- 4 Change the dashboard as desired. For further infos about the options, see chapter ["Creating a Dashboard" on page 302](#).
- 5 Click **Save**.

• *Deleting a Dashboard*

Please note that deleting a dashboard is irreversible.

To delete a dashboard:

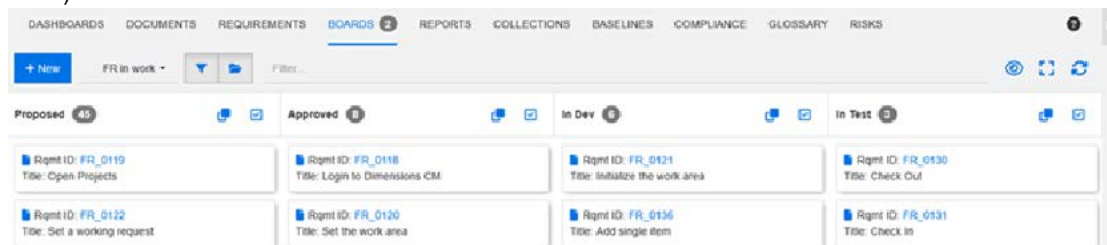
- 1 From Home View, click on the **Dashboards** tab.
- 2 Select the dashboard you want to delete from the Dashboard list.
- 3 Click **Delete** from the **Dashboard** set on the **Action** pane.
- 4 Confirm the *Delete Dashboard* dialog.

Boards Tab

Whether using Agile, Traditional, or something in-between, visualizing project status using workflow is a simple and useful addition to your reporting tool set. The Boards tab allows users to add Kanban reports to their process.

Kanban reports can retrieve their data using class reports (see ["Creating a Class Report" on page 337](#)) or can be based on the classes contained in a selected category.

Any class defined with a workflow can be used (for workflows see chapter ["About Workflows" on page 108](#)).



The following sections discuss accessing, viewing, and limiting data in a selected Board. For details regarding Board creation and maintenance see:

- ["Creating a Board" on page 311](#)
- ["Editing a Board" on page 312](#)
- ["Deleting a Board" on page 312](#)

Accessing and Switching Boards

Available Boards are accessed using the drop-down list to the right of the **New** button. The  icon identifies private boards.

Categories, like folders, are typically used to store the requirements related to a project, reports can include the contents of a single Category or a category and its subcategories. Kanban reports may also be limited to the contents of a single class report.

Multi-selection of requirements is possible for, among other actions, **Execute Transition**.

- If multiple transitions are possible, select the desired transition before proceeding.
- Modifications to mandatory and optional requirements will be applied to all requirements included in the transition.

For details see ["Transitioning Requirements to a different Workflow State" on page 109](#).

Limiting Report Data

The data included on the Board may be reflect:

- All members of the selected class in the instance.
- The content of a selected report.
- The category selected at board creation (although we recommend allowing reports to be available for reporting from all categories, with filtering based on category selection as described below).

The Funnel and Folder Settings

The Funnel and Folder Settings applied to the Dashboards, Boards, and Risks Tabs control the objects processed to produce the results.

The default is to gather data from the instance, i.e., all categories in the tree. However, the data source can be modified using the Funnel and Folder settings.

Choice	Description
	If neither funnel nor folder is selected (both with white background), the reports are based on ALL data in the instance.
	If both funnel and folder are selected (both with dark background), the reports reflect the data in the selected category as well as its subcategories.
	If only the funnel is selected (funnel dark, folder white background), the reports reflect the data in only the selected category, without including data in any subcategories.

It is possible for reports to be created with category constraints. For example, a user may restrict a report (using the [Attribute Constraints Tab](#)) to one or more specific categories. **Such constraints will override the filter and funnel category selections.**

Creating a Board

To create a Kanban board:

- 1 From the **Home View** and select the **Boards** tab.
- 2 Click the **+ New** button under the **Boards** tab or click **New** in the **Board** set of the Action pane to open the *New Board* dialog.
- 3 Enter the **Title** of the board.
- 4 Select the class for which you want to create the board.
Note that only classes which have a workflow are available for selection.
- 5 Select the states to be included on the board.
- 6 To filter the list of reports, type parts of a report name in search.

- 7 Select a report.
- 8 If your user account has the **Create Public** right, you can select the **Public Board** option. If this option is selected, also other users can access the board. If this option is clear, only the user who created the board can access it.
When selecting the **Public Board** option, the **Visible for** and **Editable for** lists are shown. Select the groups you want to be able to see or edit the dashboard.
 - a To give permission (to see or edit the board) to all groups, select **All**.
 - b To give permission (to see or edit the board) to some groups, select the groups to give the permission to. These groups are marked with a check mark.
- 9 **Show in Subcategories:** If checked the Board is accessible in subcategories of the category in which it was created.

Users who do not have access to the root category will be able to access the Board from subcategories to which they do have access.
- 10 Click **Save**.

Editing a Board

To edit a board:

- 1 From the **Home View**, **Boards** tab.
- 2 Select from the menu, the board you want to edit.
- 3 Select **Edit** from the **Board** set on the **Action** pane.
- 4 Introduce modifications.
- 5 Click **Save**.

Deleting a Board

Please note that deleting a board is irreversible.

To delete a board:

- 1 Go to the **Home View** and select the **Boards** tab.
- 2 Select a board you want to delete from the board list.
- 3 Click **Delete** from the **Board** set on the **Action** pane.
- 4 Confirm the *Delete Board* dialog.

Risks Tab

Risk Management Reporting

The Risk Management Report, available through the Risks Tab, enables users to monitor potential problems throughout the project or release cycle. The report is defined through its configuration, after

which Risk objects, like any requirement object, are defined, with status tracked and modified through mitigation.

The Risk Priority level is calculated automatically based on the defined Occurrence and Severity Rating for Initial and Final values in terms of likelihood of occurrence, coupled with the severity of the consequences.

Input to Standard Reporting: The attributes included in the Risk Management Class can be used in standard reporting. Class and graphical reports can be created using custom or system attributes as with any other requirement classes. For default attribute settings, see ["Risk Related Attributes" on page 314](#).

Workflow: Risks move through a default Workflow from Open to either Mitigated or Closed, in either of the latter cases, the Risk will have been removed from active status. The process of mitigation can, of course, move slowly and require multiple steps. The HTML attributes defined within the Risk class allows for information to be appended as the process evolves.



NOTE

Before Risks can be created and managed within RM, the Risk Class must be defined, see ["Creating the Risk Class" on page 587](#).

The core of Risk Management reporting is established through the settings and calculations defined in ["Risk Management Settings" on page 90](#). These settings may be accessed and modified using Risk Options.

For detailed information on each of the attributes that may be included in each Risk Object, see [Risk Related Attributes](#).

Accessing the Home Tab Risk Report

- 1 From the Home View, select the **Risks** tab:

Existing entries may be selected and, using the Open Action, opened for review and editing. As changes are applied to requirements, risks assessed and mitigations considered and implemented, the full story remains available as the development process evolves.



Modify Risk Options: This button raises the Instance Settings dialog for Risks, and may be modified as to Tab layout and color coding.



Refresh Risk Tab Content: This button refreshes the content of each of the entries listed in the tab.

+ New Filter risks... 🔍 🔄							
PUID	Title	Severity Rating	Occurrence Rating - Initial	Severity Rating - ...	Occurrence Rating ...	Risk Priority - Initial	Risk Priority - Final
RISK_1	Performance goals n...	3	3	2	2	High	Medium
RISK_2	SLA not reached	3	2	1	1	High	Low
RISK_3	Data loss in integrati...	4	3	1	1	Extreme	Low

Figure 5-2. Tracking, Considering, and Mitigating Improves the Picture.

- 2 Click the **+ New** button under the **Risks** tab or
Click **New** in the **Risks** set of the Action pane to open the *New Risk* dialog.

- 3 Enter the **Title** of the Risk. In this example, our Risk will be associated with a client requiring weekend support time slots fairly late in discussions.
- 4 Enter a description of the Risk.
- 5 Enter a category, if the Risk is to be applied to only one project.
- 6 Select an occurrence rating.
- 7 Describe potential causes and effects. For example, a critical issue is raised and the client cannot move forward with weekend orders.
- 8 Identify the person responsible for the Risk through its mitigation.
- 9 Define the initial Severity rating.
- 10 Click **Save**.

Risk Related Attributes

The following attributes are defined, by default, when the Risk Class is created, the names may be changed to incorporate a local process, but the attribute descriptions should make the intent clear.

Attribute Name	Description
Action Taken	Text attribute that describes the action taken to mitigate the risk.
Description	Text attribute that describes the risk.
Mitigation Strategy	Text attribute that provides a summary of the risk mitigation strategy.
Occurrence Rating (Initial)	Numeric attribute identifying the initial occurrence rating of the risk. 1 - Improbable 2 - Possible 3 - Probable
Occurrence Rating (Final)	Numeric attribute identifying the Final occurrence rating of the risk. 1 - Improbable 2 - Possible 3 - Probable
Potential Causes	Text attribute listing potential faults causing a failure
Potential Effects	Text attribute listing potential effects of failure
Reason for Change	Standard text attribute that identifies the reason for a proposed object change. If change proposals will not be used, it is best to hide this attribute from view in case the process changes in future (see "Hiding an Attribute" on page 536).
Recommended Action	Text attribute identifying remedial action, e.g. addition of safety feature(s), recommended to reduce the Risk Priority Number (RPN).
Responsible	User attribute identifying the responsible user or group responsible for mitigation.

Attribute Name	Description
Severity Rating - Final	A risk severity rating evaluates the potential harm of a risk by combining its likelihood and impact. If mitigations make the risk improbable, the severity rating becomes acceptable. Numeric attribute that identifies the final severity rating of the risk. 1 - Acceptable 2 - Tolerable 3 - Undesirable 4 - Intolerable
Severity Rating - Initial	Numeric attribute that identifies the initial severity rating of the risk. 1 - Acceptable 2 - Tolerable 3 - Undesirable 4 - Intolerable
Title	Alphanumeric attribute that contains the title or summary of the risk.

Compliance Tab

Compliance reporting is used to ensure that:

- No object assigned to the release has not been approved.
- No Business requirement assigned to the release is not linked to an approved functional requirement.
- No Functional Requirement is without a link to a test case with a status of passed.

The Dimensions RM Compliance Report is designed to help organizations use the data stored in Dimensions RM to assess adherence to corporate by-laws, rules, regulations, and standards - internal or external.

A subset of the **Compliance** functionality can be included in traceability reports gathered to show progress on your dashboard. However, the Compliance Audit allows the organization to wrap a single report around the set of rules that ensure compliance.

The Compliance Tab provides access to compliance reports associated with a project or release and makes those reports available for selection and execution.

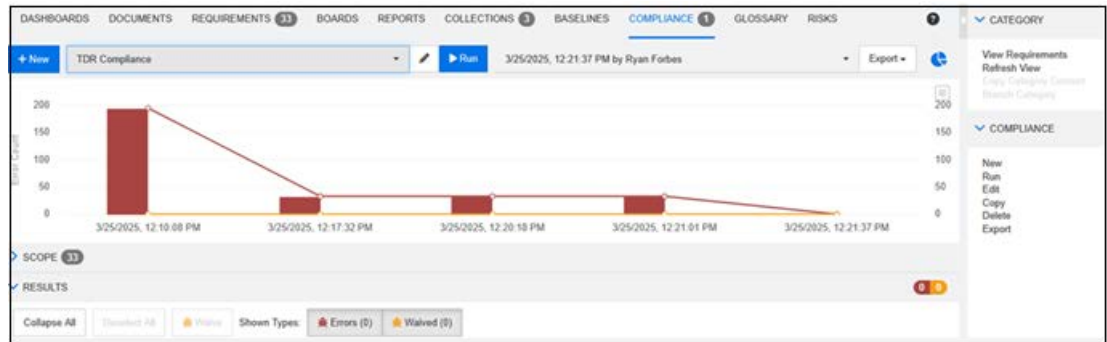


Figure 5-3. Reaching Compliance

Actions From the Compliance Tab

Action	Description
New	Create a New Compliance Report, complete instructions for compliance creation and editing can be found in "Compliance Reporting" on page 358 .
Run	Select a report from those listed on the menu to the right of the New tab, and execute. Rules to be executed may be selected singly or Run in sequence as a single command.
Edit	Select to modify an existing Compliance Report, complete instructions for compliance creation and editing can be found in "Compliance Reporting" on page 358 .
Copy	Select to copy the existing Report for modification and reuse.
Delete	Select to delete the currently selected compliance report. This Action must be confirmed and cannot be undone.

Documents Tab

The Documents Tab presents an alphabetical listing of the documents in the currently selected category or categories. Further filtering of the full list may be accomplished using the **Search** field.

DASHBOARDS DOCUMENTS 13 REQUIREMENTS REPORTS COLLECTIONS BASELINES GLOSSARY ?				
+ New Search... ☆ Columns				
Name ▲	Description	Time Modified	Modified By	
 ALM Design Specifi...		31-JUL-2025@12:47:23	 Ryan Forbes	
  ALM Requirements ...	Verified - ALM Requireme...	15-JUN-2023@10:51:41	 Jutta Schoeneberger	
  ALM Requirements Release 2	Test in progress for ALM Requirements Release 2	30-JUL-2025@06:48:11	 Ryan Forbes	
  ALM Requirements ...	Planning for ALM Require...	15-JUN-2023@12:24:14	 Jutta Schoeneberger	
 ALM Requireme...		14-APR-2015@13:24:24	 Joseph Wilson	
 ALM Requireme...		30-SEP-2015@18:47:21	 Joseph Wilson	

The following icons identify the Document type:

-  identifies a document, Parent document, or Child document
-  identifies a document, Parent document, or Child document
-  identifies a snapshot

Deleted documents, when included, are listed with the name in gray.

New: Opens the New Document dialog, see ["Parent and Child Documents" on page 231](#).

Search: Insert a text string to filter based on Document Name and Description..

Favorites: Favorites toggles between listing all documents and listing only those marked as Favorites.

 **Columns:** Opens the **Document Properties** dialog.

To change the columns displayed

Click  Columns icon to open the **Document Properties** dialog.

Select attributes and use the arrows to add columns you wish to include or to remove the columns you wish to hide.

Set as Instance Settings: The Instance Administrator may choose to make the settings the default for those using Instance Settings.

Click **OK**.

 : If a document has snapshots or child documents, expand the list and review or choose an entry to open.

If documents typically contain many snapshots, and you prefer to see only the most recent listed, change the setting, see ["• Documents: Show only most recent Snapshots" on page 74](#).

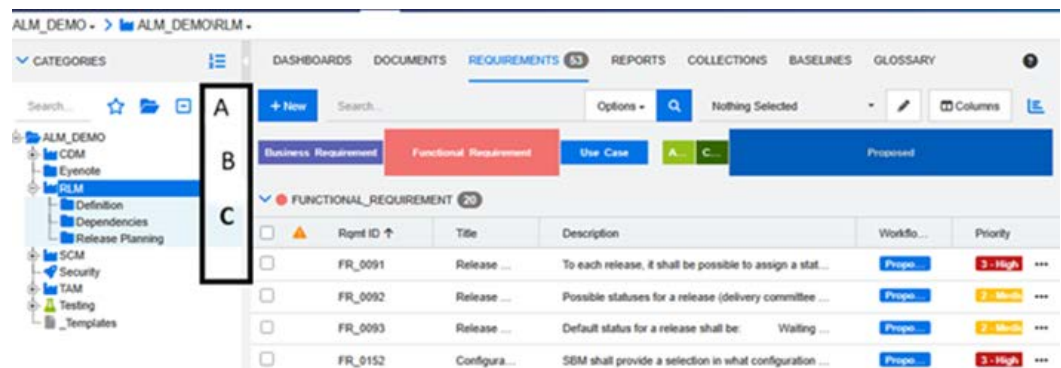
Double-click an item to open it in the Document work page, or select the item and then click an action in the Actions pane. For a complete list of document possibilities, See ["About Documents" on page 212](#).

Requirements Tab

From the Requirements Tab all requirement objects may be listed by or just a filtered few may be listed, reviewed and modified using the Editable Grid.

The Requirements Tab Consists of:

- A. [The Content Header](#), provides access to the standard Search and Filter options.
- B. [The Overview Graph or Pie Chart](#), provides single-click filters to objects by Class and Workflow.
- C. [The Home View Editable Grid](#), provides access to quick changes or object edits.



The Content Header

- 1 Use **+ New** to raise create a new requirement dialog, see ["Creating a New Requirement"](#) on page 117.
- 2 Use the **Search Box** to filter the list based on the text entered..
 - The search string is only applied to text and alphanumeric attributes included in the display. Use **Columns** to add an attribute to the display.

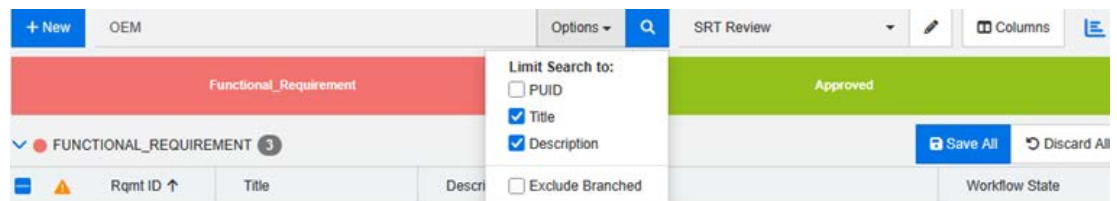


Figure 5-4. Using a Filter, limit the display to objects containing "OEM".

- 3 The **Options** menu limits the search scope to one or more of the following:
 - a Limit the search to Requirement Identifier (PUID), Title or Description

PUID: Select this checkbox, if you want to limit your search to the attribute identifying the requirement ID. Depending on the class configuration, this attribute may be listed as Rqmt. ID or may use a local identifier.

Title: Select this checkbox to limit your search string to the *Title* attribute. Depending on the class configuration, the Title attribute may have been assigned a different display name.

Description: Select this checkbox to limit the search to the object text or statement.

b Exclude Branched:

This option will be displayed if the instance has implemented Branching. Selecting this option will limit the return to requirements that have not been branched. For further information on branching/merging, see chapter ["Branching and Merging Requirements"](#) on page 197.

- 4 **Select a Quick Search filter** from the dropdown menu. or use the  pencil icon to edit or to create a new filter.

The Quick Search Filters, available from Views and Home, provide the ability to search for requirements created or modified by whomever, before after or on any given date, and containing whatever you are searching for. For New Filter Creation and Edit Filter details, see [Quick Search Filtering](#).

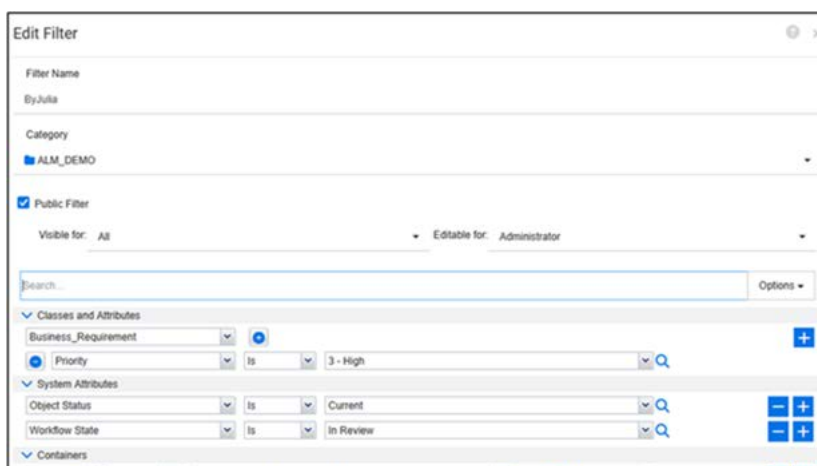


Figure 5-5. Edit a Filter, Create a filter, or select None (no filter).

- 5 To change the attributes displayed Click  Columns.

It is also possible to change settings, see ["Quick Search Settings"](#) on page 81.

- 6 The Graph/Pie Toggle

Click the graph icon  to access the Pie Chart
Click the pie icon  to hide them both

The Overview Graph or Pie Chart

The Overview Tab provides single click filters, allowing users to quickly limit the list to requirements in selected classes and workflow states.

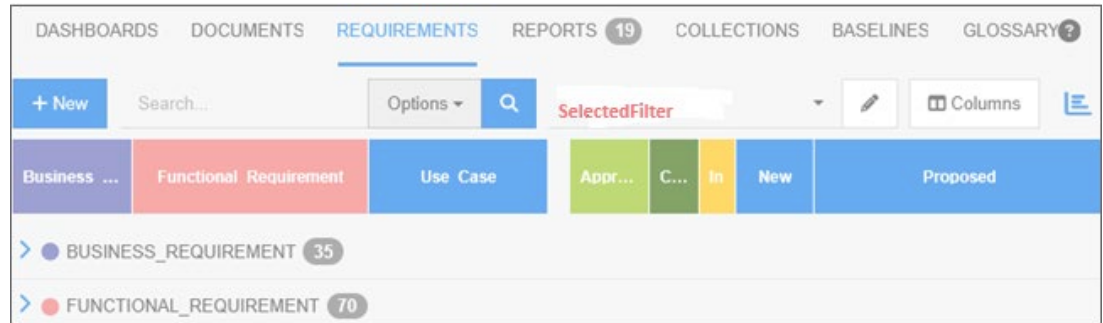


Figure 5-6. The Overview Graph - Click to filter the Display



Figure 5-7. The Pie Chart - Click Slices to Filter, Hover to show percentages.

For Overview Graph and Pie Chart, Classes are listed on the left, workflow status (for those with Workflows defined) is listed on the right.

- 1 The default, no class selected:

All classes are listed with the number of objects contained in each class.

- 2 **Highlighting a class** will cause the content displayed to be limited to that class.

- 3 **Highlighting a workflow state** will limit the content to that state.

- 4 To include or exclude subcategories:

Open or close the folder on the icons bar in the Category pane. The folder icon toggles between limiting the display to the selected category, and including the content in subcategories.

The Home View Editable Grid



NOTES About the Home View Editable Grid

The Home View Editable Grid enables users to change multiple attributes in the same requirement, to edit most attribute types concurrently, as well as to transition multiple requirements. However, all the same rules apply.

• **Mandatory Attributes:**

When creating a new requirement or attempting to transition an existing requirement to the next workflow state: **if there are attributes in the requirement marked as *mandatory*, they must be included in the display.** If not included the requirement can neither be saved nor transitioned. You can contact support or: .

Use the  Columns icon to modify the attributes displayed or the order.

• **Concurrent Editing:**

If the Instance is configured to support the recommended concurrent editing (see [Concurrent Editing](#)), a merge facility is available. Please see details in [Merging Concurrent Requirement Changes](#).

• **Changes to the following attribute types are supported:**

Alphanumeric, Date, List (including assignment and checkbox), Numeric, Text, Group, User, URL, Lookup, Workflow.

• **Workflow Transition for Multiple Requirements**

If there are mandatory attributes associated with the target workflow, the user will be prompted to populate those attributes for the first requirement. The content entered will be applied to all others. Workflow related changes will be applied through the save button on the open form.

Use the  Columns icon to modify the display such that all important attributes are included in the display.

Users may Double-click to open an object for editing and saving requirement changes from within the form.

Select and Edit in the Home View Editable Grid:

- 1 **Click Inside** an Attribute to edit within the grid.
 - a Click  when typing is complete.
 - b Click  to save all changes in the requirement.
 - c Click  to discard unsaved changes in the requirement.
 - d Click **Save All** to save all unsaved changes in the list.
 - e Click **Discard All** to discard all unsaved changes in list.

PRODUCT REQUIREMENTS 90							Save All	Discard All
☐	Category	Req ID ↑	Title	Compliance	Effort	Links In	Links Out	
☐	RMDEMO/Pe...	PROD_00013	Database stores at least 10...	Fully Compliant	0	0	...	
☐	RMDEMO/Fu...	PROD_00014	Database naming conventi...	Partially Compli...	2	0	...	
☐	RMDEMO/Mod u	PROD_00015	Individual user database	Fully Compliant	2 25	0	...	
☐	RMDEMO/Fu...	PROD_00016	DB's centrally located	Partially Compli...	2	0	...	
☐	RMDEMO/Mod u	PROD_00017	Use Windows desktop	Fully Compliant	2	0	...	

Figure 5-8. Modify attributes, Review and Save

- 2 To make the same change to non-HTML text attributes or list attributes across multiple requirements:
 - a Check the boxes for **all** requirements to be changed.
 - b Click ☒ when typing or selection is complete. Note that you may return and make an additional change to the same or any cell in the highlighted requirement.
 - c Click  to discard object changes, or **Discard All** for all unsaved changes.
 - d Click  to save the object changes, or **Save All** for all unsaved changes.
- 3 To investigate and/or clear suspect links, click the suspect icon . For details, see "Suspect Links" on page 158.
- 4 **Relevant Actions Using the ... ellipsis**

For Single Selection	
Edit	"Editing a Requirement" on page 122
Copy	"Copying Requirements" on page 131
Delete	"Deleting a Requirement" on page 134
Create Link	"Create Link or Link Existing" on page 147
Create new & Link	"Creating a New Requirement" on page 117
Add Comment	"Managing Comments in Requirements" on page 138
Add to Collection	"Adding Requirements to a Collection" on page 370

For Multiple Selections	
Copy	"Copying Requirements" on page 131
Delete	"Deleting a Requirement" on page 134
Create Link	"Create Link or Link Existing" on page 147

For Multiple Selections	
Create new & Link	"Mass Creating Requirements" on page 119
Add to Collection	"Adding Requirements to a Collection" on page 370

Reports Tab

This section describes the listing, selection and execution of reports from Home. To access details concerning report creation, edit and execution, see ["Creating Reports" on page 337](#).

Reports allow users to filter objects based on class, category, attributes (system or custom) or relationships. All data can be defined at report creation time, or selected attributes can be entered at run time. Reports can be assigned names, descriptions and then saved; all are listed for reuse in the Reports Tab.

To Execute a Report

Double-click a listed report to execute, or select the item and then click an action from the Reports set on the Actions pane.

For details see [Chapter 6, "Working with Reports" on page 333](#).

The Reports menu bar:

- New Creates a New Report
- Search Filter reports listed
-  Click to show only favorites
-  Click to show only public reports
-  Click to show only private reports
-  Click to list all reports, sortable by selected tabs
-  Click to list reports by Type

Reports by Type Mode

An alphabetical listing of the reports contained in the currently selected category or categories. Reports are listed in columns by report type: **Class**, **Relationship**, and **Traceability**. Columns can be sorted by clicking the column title.

DASHBOARDS BOARDS DOCUMENTS (6) REQUIREMENTS (195) REPORTS (108) COLLECTIONS BASELINES GLOSSARY		
+ New Search...     		
Class Reports	Relationship Reports	Traceability Reports
Name ▲ Class All Current Comp... Component_Req... All Current Data ... Component_Req... All Current Defects Defects	Name ▲ All Current Discussions Comp Rqmts Changed Since Date - Count Component Rqmts History Back	Name ▲ Component Requirement Defects Component Requirement Tests Component Requirements Design

Icons listed with report type:**For Class Reports:**

Class Distribution Report



Class Trend Report

For Relationship Reports

Relationship Matrix Report

For Traceability Reports

Traceability Coverage Report



Report created by the current user

All Reports Mode

An alphabetical listing of the reports in the currently selected category or categories. The **All Reports mode** allows users to select the columns included in the displayed see [Changing the columns displayed](#).

The different report types (Class, Relationship, and Traceability) are distinguished by the Type column. The Class column includes the requirement type.

DASHBOARDS BOARDS DOCUMENTS (6) REQUIREMENTS (195) <u>REPORTS (108)</u> COLLECTIONS BASELINES GLOSSARY					
+ New		Search...		☆ 🔄 👤 Columns 🗑️ ⋮	
Name ▲	Type	Class	Description	Created By	
All Current Component Requir...	Class	Component_Requirements	This script reports all the curre...	👤 Ryan Forbes	
All Current Data Comp Require...	Class	Component_Requirements	All current component require...	👤 Ryan Forbes	
All Current Defects	Class	Defects		👤 Ryan Forbes	
All Current Design Items	Class	Design		👤 Ryan Forbes	
All Current Discussions	Relationship		This script reports all current Di...	👤 Ryan Forbes	
All Current Marketing Rqmts	Class	Marketing_Requirements	This script reports all the curre...	👤 Ryan Forbes	
All Current Product Rqmts	Class	Product_Requirements		👤 Ryan Forbes	

Changing the columns displayed

- 1 Use the Columns icon to open the **Report Properties** dialog.
- 2 Use the arrows to add columns you wish to include and remove the columns you wish to hide.
- 3 From Report Options, check **Show Report Tooltip on hover** to include the report description in the display.
- 4 Click **OK**.

Setting Reports as Favorites

For ease of access, reports can be marked as a favorite report. This allows quick access to reports which are used frequently. Each user can define their own favorites.

To mark a report as a favorite report, do the following:

- 1 From the Reports listed in **All Reports mode**

2 Select an entry, and Click the star that appears at the right side of the display line.

To list only favorites click the white star on the Report Menu Bar; the filled star lists only Favorites.

To remove an entry from the Favorites, list the reports and Click the star that appears at the right side of the display line.

Filtering Reports

Reports can be filtered by using one or several of the following filters:

- **Search:** Type a text into the **Search** box. Only reports with the entered text in their name are shown. Search can be combined with all other options.
- **Favorites:** If selected, favorite reports are displayed. **Favorites** can be used in combination with **Public Reports** or **My Reports**.
- **Public Reports:** If selected, public reports are displayed.
- **My Reports:** If selected, reports created by the logged in user are displayed.

Collections Tab

Collections are named groups of objects selected from one or more classes. Collections allow you to easily gather requirements for assignment, for review, or for baseline creation.

As with all containers in Dimensions RM, collections do not contain copies of requirements, but links to a requirement version, often but not always the latest (current) version. See ["Managing Requirements in a Collection" on page 368](#) for additional detail concerning the creation and maintenance of Collections.

The Collections Tab in Home View lists all collections in the selected category. The information in the listing includes collection name, the number of objects contained in the collection, the Category and modification information.

DASHBOARDS 4	DOCUMENTS	REQUIREMENTS 52	REPORTS 52	COLLECTIONS 4	COMPLIANCE	BASELINES 5	GLOSSARY ?
+ New		Search...		☆	Columns		
Name ^		Category	Time Modified	Modified By			
ALM Release 2: FR and UC	52	ALM_DEMO	30-MAY-2025@18:03:19	John Fogerty			
Check SCM	2	ALM_DEMO	15-JUN-2023@14:20:36	Joseph Wilson			
JustBizForSaab	24	ALM_DEMO	15-MAY-2025@17:20:08	John Fogerty			
JustFuncForSaab	8	ALM_DEMO	15-MAY-2025@17:02:02	John Fogerty	☆		

New: Opens the New Collection dialog, see ["Creating a New Collection" on page 369](#).

Search: Insert a text string to filter the list based on Collection Name and Description..

Favorites: Favorites toggles between listing all collections and listing only those marked by the user as Favorites.

 **Columns:** Opens the **Collection Properties** dialog.

To change the columns displayed

Click  Columns icon to open the **Collection Properties** dialog.

Select attributes and use the arrows to add columns you wish to include or to remove the columns you wish to hide.

Set as Instance Settings: The Instance Administrator may choose to make the settings the default for those using Instance Settings.

Click **OK**.

Compare:

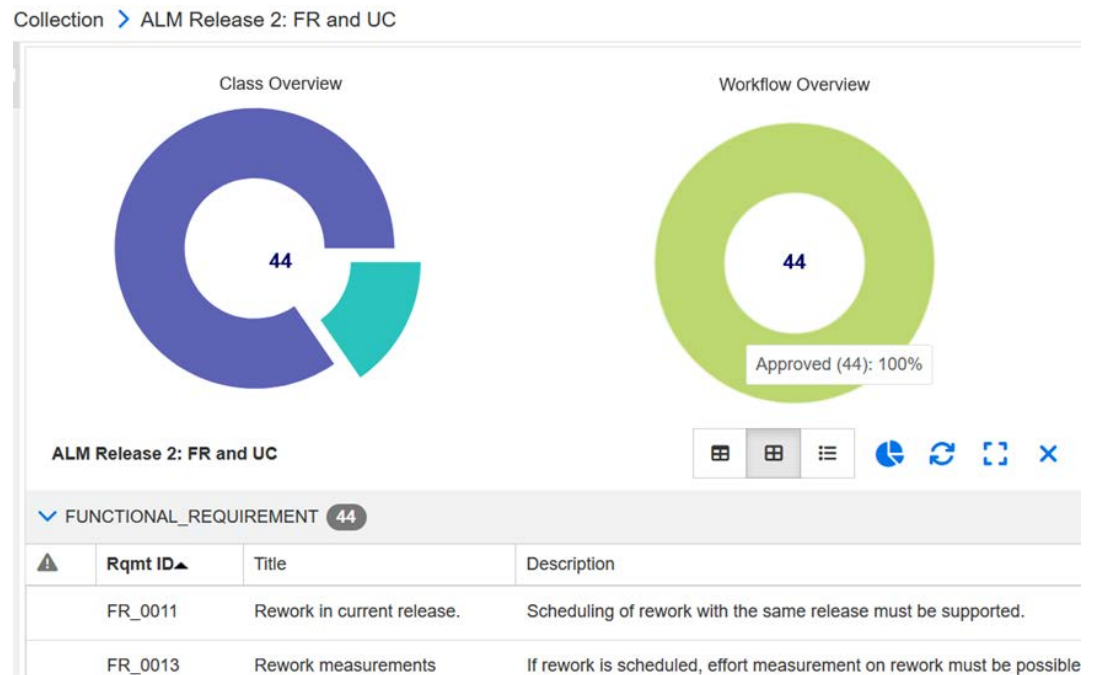
It is possible to select two collections from the list and compare them,. This is an way to understand what is different between two releases, see ["Baseline and Collection Related Functions"](#) on page 379.

View Content:

Double-click an item to open it in the work page, or select the item and then click an action in the Actions pane (e.g., View Content). For additional information concerning Collection related functions, see ["Baseline and Collection Related Functions"](#) on page 379.

Parent Collections:

Parent collections (identified by the "(Parent)" suffix) can contain collections, baselines, documents, or snapshots. For further information about parent collections, see chapter ["About Parent Collections"](#) on page 376.



In the open collection:

- Editable-Grid, Grid, or Form view can be selected to list objects.
- Overview Graphs display a class breakdown and, if relevant, a breakdown of entries in defined workflow states.
- The display can be refreshed, extended, or, using the **X**, closed.

Baselines Tab

Baselines are frozen sets of objects created based on the content of a collection or Document. Once created, the versions contained in the baseline cannot be modified.

As with all containers in Dimensions RM, Baselines do not contain copies of requirements, but links to a requirement versions, see ["Managing Baselines" on page 373](#).

The Baselines Tab in Home View lists all baselines in the selected category. The information in the listing includes baseline name, the number of objects contained in the baseline, the Category and modification information.

DASHBOARDS DOCUMENTS REQUIREMENTS BOARDS REPORTS COLLECTIONS BASELINES 3 GLOSSARY ?					
+ New		Search...		☆ Columns	
Name		Category	Time Created	Time Modified	Modified By
TDR R25.2	33	ALM_DEMO	26-MAR-2025@01:12:31	26-MAR-2025@01:12:31	Ryan Forbes
BL ALM Requirements R...	81	ALM_DEMO	15-JUN-2023@09:20:40	15-JUN-2023@09:20:40	Jutta Schoeneberger
BL ALM Requirements R...	84	ALM_DEMO	11-MAR-2015@14:45:03	11-MAR-2015@14:45:03	Joseph Wilson

In the open Baseline:

- Editable-Grid, Grid, or Form view can be selected to list objects.
- Overview Graphs display a class breakdown and, if relevant, a breakdown of entries in defined workflow states.
- The display can be refreshed, extended, or, using the **X**, closed.

Compare:

It is possible to select two baselines from the list and to compare them, an excellent way to understand what has changed between releases, see ["Baseline and Collection Related Functions" on page 379](#).

View Content:

Double-click an item to open it in the work page, or select the item and then click an action in the Actions pane (e.g., View Content). For additional information concerning Baseline related functions, see ["Baseline and Collection Related Functions" on page 379](#).

Glossary Tab

An Alphabetical list of terms used in application, product or corporate reports are created and managed within Dimensions RM. The **Glossary** tab is only available if the instance administrator created the Glossary class following the instructions outlined in ["Defining a Class" on page 571](#).

The following sections discuss the Actions available to add, modify and maintain glossary entries.

Action	Description
New	Click this button to create a New Glossary entry. For complete details see "Adding a Glossary Entry" on page 329
Edit	Select an existing entry, and click Edit to introduce modifications. For details "Editing a Glossary Entry" on page 330 .
Save	Select Save from the actions list or use the Save button on the form to apply changes to the glossary record.
Copy	Select an existing entry, and click Copy to duplicated its contents in another category. For details "Copying Glossary Entries" on page 329 .
Move	Select an entry and click Move to change the category location or to move an entry to the root category such that it becomes available to all subcategories. For details, see "Moving Glossary Entries" on page 330 .
Delete	Delete the selected entry from the glossary. For details, see "Deleting Glossary Entries" on page 331
Show Extended Form	Select an entry and click Show Extended Form to view all segments of the glossary entry form. For details, see "Viewing Extended Information" on page 331 .
Importing Glossary Items using CSV: The glossary class is a special, hidden, class and will not be available on the CSV import class list unless the Instance Administrator makes a temporary modification. To make the Glossary class temporarily Import Ready, please see "Defining the Glossary Class" on page 578.	

Change Control Board

Name: Change Control Board

Description: In software development, a Change Control Board (CCB), sometimes referred to as a Change Review Board (CRB) or Software Change Control Board (SCCB) is a committee that makes decisions regarding whether or not proposed changes to a software project should be implemented.

Synonyms: SCCB, CCB

Groups: Project Management

Not Recommended: ☐

Show In Subcategories: ☒

Save Cancel

Figure 5-9. A Highlighted Glossary Entry.

Adding a Glossary Entry

- 1 Click **New** from the Glossary tab or from the Glossary set in the **Actions** pane.
- 2 In the New **Term** Dialog:

Name: Specify the word or phrase to be defined.

Description: Enter the glossary definition.

Synonyms: Alternative words for the term may be entered into the **Synonyms** box. Separate entries with a comma.
- 3 **Groups:** Select the relevant Attribute Group.

Terms may be separated into attribute groups, for example, Corporate terms, or terms associated with specific products.

To add items to the Groups attribute in the Glossary Class see ["Attribute Definition" on page 533](#).
- 4 **Not Recommended:** Indicates terms that should NOT be used.

If checked:

 - The term is **not** included in the Glossary chapter.
 - If Glossary highlighting is enabled, the term is marked in red.

The description for Not Recommended entries should state the reason why this term should not be used.
- 5 **Category: Select the Category in which the Term should be stored.**

Storing the Term in root will make it available to all categories.

However, if some projects use Terms specific to the project they may be stored with the project.
- 6 **Show in Subcategories:**

If checked:

 - The term is accessible in subcategories of the category in which it was defined.
 - Users who do not have access to the root category will have access to the entry from all subcategories to which they do have access.
- 7 Click **Save**.

Copying Glossary Entries

If parts of a glossary entry are identical, you may choose to copy one or several entries and then edit them rather than manually copying parts over to the new entry.

To copy glossary entries, do the following:

- 1 Select one or several glossary entries in the list.

- 2 Click **Copy** in the **Glossary** set of the **Actions** pane. This opens the **Copy Glossary Term(s)** dialog.
- 3 Select the category into which the entry should be copied..
- 4 If you want to overwrite terms that already exist in the category, select the **Overwrite existing terms in target category** option.
- 5 Click OK.

Editing a Glossary Entry

To edit an existing glossary entry, do the following:

- 1 From the Glossary Tab, select the glossary entry in the list.
- 2 Select **Edit** from the **Glossary** set of the **Actions** pane. This changes the detail section of the **Glossary** tab to the edit form.
- 3 Make your desired changes to **Term**, **Description**, **Synonym**, or **Groups**.
- 4 If the **Not Recommended** option is selected, the following occurs in the document:
 - The term is not included in the Glossary chapter.
 - If Glossary highlighting is enabled, the term is marked in red.

The description for Not Recommended entries should state the reason why this term should not be used.

- 5 **Show in Subcategories:** If checked, typically the default, the glossary entry is accessible in subcategories of the category in which it was defined.

Users who do not have access to the root category will have access to the entry from all subcategories to which they do have access.
- 6 Click **Save** at the bottom of the edit form or click **Save** in the **Glossary** set of the **Actions** pane.

Moving Glossary Entries

Glossary entries may be moved from one category to another, or to the root category such that they become available to all subcategories. To move the entry, do the following:

- 1 Select one or several glossary entries in the list.
- 2 Click **Move** in the **Glossary** set of the **Actions** pane. This opens the **Move Glossary Term(s)** dialog.
- 3 Select the category you want to move the glossary entries to.
- 4 If you want to overwrite terms that already exist in target category, select the **Overwrite existing terms in target category** option.
- 5 Click **OK**.

Deleting Glossary Entries

To delete glossary entries, do the following:

- 1 Select one or several glossary entries in the list.
- 2 Click **Delete** in the **Glossary** set of the **Actions** pane. This opens the **Delete Term** dialog.
- 3 Click **OK** to delete the glossary entries.

Viewing Extended Information

If you want to view additional information on a glossary entry, e.g. who edited on what date or what was the content in various revisions, you can open the glossary entry in "Extended Form" mode.

To open the glossary in "Extended Form" mode, do the following:

- 1 Select the glossary entry in the list.
- 2 Click **Show Extended Form** in the **Glossary** set of the **Actions** pane.

Chapter 6

Working with Reports

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Report Basics

Reports are queries, created to collect the answers to questions:

- Do all Functional Requirements assigned to a release have Test Cases?
- Can all Business Requirements be traced through Functional to Test?
- Can we create a report listing artifacts created after November, 2024, with a status of Accepted, and assigned to development.

Reports can be simple filters, or complex traceability reports. For every report type, the report wizard is available to assist in building the query.

Reports can also be created on the fly. For example, if you have created a Quick Search filter to find all high priority objects, assigned to the TDR component, as well as to Release 13, you may choose the **Create Report** Action from the set below View; the settings will all be included - simply give the report a name and save it as Public or Private.

This Chapter describes the functions available to create, maintain and execute reports.

This initial section describes the functions available to open and to execute existing reports.

- ["Listing and running existing reports" on page 334](#)
- ["Running a Report with Runtime Parameters" on page 336](#)

For details concerning Report Creation, please see ["Creating Reports" on page 337](#).



NOTE Reports will not include objects to which there is no access

Due to security regulations, requirements stored in categories to which the user does not have access are not returned in a report, even if they satisfy the report constraints.

Listing and running existing reports

- 1 A listing of reports by Category is available in the **Reports** tab of the Home View.
- 2 For assistance in locating the desired report.

Search is available to limit the display.

Listing All Reports  rather than Reports by Type  will include report details including the description.

When displaying a report result, reports of the same type can be accessed from the breadcrumb which is located above the report results.

- 3 Double-click a report or highlight and select Run from the Actions pane.
- 4 If the report was defined with runtime options, enter the information requested.

Click the **Run Report** button on the report dialog.

If there are questions concerning the Runtime Parameters see: ["Running a Report with Runtime Parameters" on page 336](#).

Viewing the Report: Report Options and Functions

The following icons are available from the menu bar of the executed report.

 **The Category filter** allows users to run a report based on all data., or to limit the report to the category selected in the category tree - or to toggle between them.

The following shows the selected category filter, only objects contained in the selected category will be included in the report.

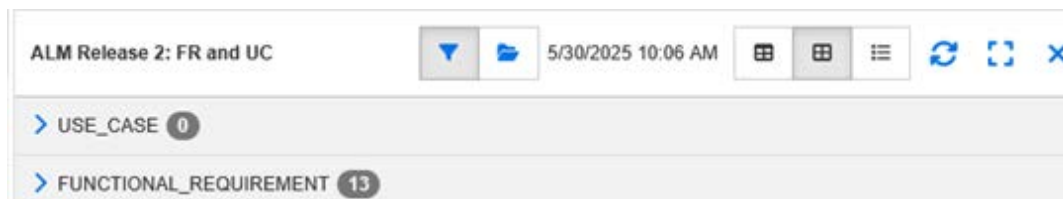


Figure 6-1. The menu bar on the executed report indicates the filter is selected.



NOTE Category constrains within reports

If a report was created with constraints on one or more categories, *those constraints will override category selection*. We recommend using the category filters for constraints when working in multiple categories.

 **Include Subcategories:** If selected (gray background), the report shows data from the selected category and its subcategories. Note that the **Include Subcategories** is only selectable once **Filter by Categories** is selected.



Processing data in selected category and its subcategories.

Execution Date and Time: Excluding Dashboards, the execution date, based on the format of the server system date, is displayed at the top of every report, and included on the report when exported.



: Change the display to editable grid view. For details, see chapter ["Editable Grid View" on page 101](#).



: Change to grid view. For details, see chapter ["Grid View" on page 103](#).



: Change to form view. Form view is only supported for Class reports. For details, see chapter ["Form View" on page 104](#).



: Reloads the report result with the selected parameters. Note that this function is only available if the report uses runtime parameters.



: Refreshes/Reloads the report result

: Expands the report

: Closes the report

Switch to Gap View and **Switch to Outline View**: For Traceability reports, users can toggle between Gap view and Outline view using the entries on the Actions pane.

Running a Report with Runtime Parameters

Runtime parameters are attribute values which are not selected at report creation, but at the time the report is run. This allows users to reuse the same report for all values of, for example, a release or user group.

To run a report with runtime parameters, do the following:

- 1 A listing of reports by Category is available in the **Reports** tab of the Home View.
- 2 For assistance in locating the desired report.

Search is available to limit the display.

Listing All Reports  rather than Reports by Type  will include report details including the description.
- 3 Click **Run Report**.
- 4 Enter the missing attribute value when prompted.

Perhaps the most common Runtime Parameter is the Category, please see "[Selecting a Category Runtime Parameter](#)," for details.

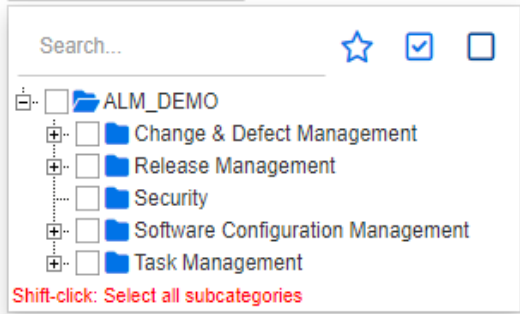
Selecting a Category Runtime Parameter

In many cases, users create reports intended for use by many team or project leads with input coming from selected categories. Search can be used to find and check specific categories or the star may be highlighted to include all user favorites. The Checked Box icon will select all available categories and clicking into the empty box will deselect all.

The following parameters must be provided to run this report. Please provide a value for each of the parameters below.

Enter Category
for FUNCTIONAL_REQUIREMENT:

Choose Categories ▼



Creating Reports

The following chapters describe how to create the different report types:

["Creating a Class Report" on page 337](#)

["Creating a Graphical Report" on page 338](#)

["Creating a Relationship Report" on page 346](#)

["Creating a Traceability Report" on page 349](#)

Creating a Class Report

This section describes the creation of Class Reports.

For general instructions on editing reports, see ["Editing a Report" on page 351](#)

With this and all Reports, if the person executing the reports does not have "read" permission in a category, the requirements in that category are not returned in the query results, even if they satisfy the query parameters.

To create a class report:

Select Class Report from the **New** menu, to open the Class Report dialog.

Class: Select the desired class from the list.

To save the report:

- Enter a name in the **Name** box.
- Type a description in the **Description** box. The maximum number of characters is 1024.
- In the **Category** list, select the category in which the report will be saved.

Public Report: Select this box to make the report public, otherwise the report is private.

Visible for: This option is only available if Public Report is selected.

Typically defaults to All, which means the report is visible for all those groups with access to the category in which the report resides. Specific groups may be selected from the list.

Editable for: This option is only available if Public Report is selected.

Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.

Show in Subcategories: If checked the report is accessible in subcategories of the category in which it was saved.

When reports are stored in the root category, with show in subcategories checked, users without root access will be able to see and run the report from all subcategories to which they do have access.

Attribute Constraints: As needed, to limit selection to requirements containing the attribute content specified. See ["Attribute Constraints Tab" on page 44](#).

Relationship Constraints: As needed to limit selection to requirements included in named containers or to those with specified links. See ["Relationship Constraints Tab" on page 51](#).

Display Options: As needed, specify the attributes to include in the report. See ["Display Options Tab" on page 53](#) for display details and report examples.

View Script / View Wizard: Click to toggle between the Wizard and Script views of the dialog. Although most functions are now available using the Wizard, selecting Script View allows users to add SQL-like functions to a basis report created using the wizard (see ["Customizing and Scripting" on page 619](#)).

If the report has been modified in Script View, the Wizard will no longer be available.

Preview: Click this button to run the report without saving the report or closing the dialog.

Save: Click this button to save and run the report. The dialog will close.

Creating a Graphical Report

This section describes, in detail, the creation of Graphical Reports. For general instructions on editing reports, see ["Editing a Report" on page 351](#)

Graphical Reports can be created using one of the following types:

- [Distribution Reports](#)
- [Trend Reports](#)
- [GANTT Reports](#)
- Calendar

A Distribution Report presents an overview of status, for example, given the requirements assigned to a particular release, report on where we are using workflow state and priority or analyst assigned.

A Trend Report presents the data over time, allows the team to see how quickly they are proceeding toward the goal.

A GANTT Report provides a mechanism to display status against time: how long did it take us to get here, and how much further do we have to go.

Distribution Reports

Complete these steps to create a distribution report:

- 1** Select **Graphical Report** from the **New** menu.
- 2 Class:** Select the desired class from the list.
- 3** In the **required to save** group, select **Distribution Report** from the **Type** box.
- 4** If you want to save the report:
 - Enter a name in the **Name** box.
 - Type a description in the **Description** box. The maximum number of characters is 1024.

- In the **Category** list, select the category in which the report will be saved.
- 5** Do any of the following:
- Public Report:** Select this box to make the report public, otherwise the report is private.
- Visible for:** This option is only available if Public Report is selected. Typically defaults to All, which means all those with access to the category in which the report resides. Specific groups may be selected from the list.
- Editable for:** This option is only available if Public Report is selected. Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.
- Show in Subcategories:** If checked the report is accessible in subcategories of the category in which it was saved. Reports useful for all users should be created in or moved to the root category.
- Users who do not have access to the root category will be able to run the report from all subcategories to which they do have access.
- 6 Attribute Constraints:** As needed, to limit selection to requirements containing the attribute content specified. See ["Attribute Constraints Tab" on page 44](#).
- 7 Relationship Constraints:** As needed to limit selection to requirements included in named containers or to those with specified links. See ["Relationship Constraints Tab" on page 51](#)
- 8** Display Options:
- Note that **Row and Column boxes** must not include: Multi line, HTML enabled or Date attributes
- a** Select a style from the list of the **Chart Style** set. For more information on chart style and chart options, see chapter ["Display Options" on page 344](#).
 - b** In the **Chart Content** set, select the attributes to be displayed in **Row** and **Column** boxes. Depending on the selected attribute, the following options are available:

Include Zero Value Data: Selecting it will include values with count 0.

Level: Available for group attributes. Selecting an entry defines which sub-attribute you wish to use in your report, additional content will be collected into a single row.

Filter by Constraint: Checking this box will ensure that the report is limited by the constraints, irrespective of the number of containers that include selected objects. Available if the **Row** box or **Column** box contains **List**, **Group**, or **Special Attribute**.
 - c** In the **Chart Content** set, an attribute may also be selected to be used to calculate totals displayed in **Sum Totals By**.
 - d** For Pie reports only the **Row** is available.
 - e** If desired, set the color for the report values. For more information on defining value colors for graphical reports, see section ["Defining Colors for Report Data" on page 345](#).
- Preview:** Click this button to run the report without saving the report or closing the dialog.

Save: Click this button to save and run the report. The dialog will close.

**TIP**

Drill down is available in graphical reports. If, for example, your report is a bar chart, clicking on a bar in the report lists the data behind the bar.

Trend Reports

**NOTE Trend Reports**

Trend Reports rely on requirement date changes to register change. To allow the Trend report to perform its calculations, it is essential that you **always use Save, as opposed to Update** when editing requirements. For further information about Save and Update functions see chapter "[Save, Update, Delete, Remove Functions](#)" on page 104.

Complete these steps to create a trend report:

- 1 Select **Graphical Report** from the **New** menu. The *Graphical Report* dialog opens.
- 2 **Class:** Select the desired class from the list.
- 3 In the **required to save** group, select **Trend Report** from the **Type** box.
- 4 If you want to save the report:
 - a Enter a name in the **Name** box. The **Save** button will save and run the report.
 - b Type a description of the report in the **Description** box. The maximum number of characters is 1024.
- 5 In the **Category** list, select the category in which the report will be saved.
- 6 Do any of the following:

Public Report: Select this box to make the report public, otherwise the report is private.

Visible for: This option is only available if Public Report is selected. Typically defaults to All, which means all those with access to the category in which the report resides. Specific groups may be selected from the list.

Editable for: This option is only available if Public Report is selected. Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.

Show in Subcategories: If checked the report is accessible in subcategories of the category in which it was saved. Reports useful for all users are typically created in or moved to the root category.

Users who do not have access to the root category will be able to run the report from all subcategories to which they do have access.
- 7 **Attribute Constraints:** As needed, to limit selection to requirements containing the attribute content specified. See "[Attribute Constraints Tab](#)" on page 44.

- 8 Relationship Constraints:** As needed to limit selection to requirements included in named containers or to those with specified links. See ["Relationship Constraints Tab" on page 51](#).
- 9 Display Options:** Select a style from the list of the **Chart Style** set. For more information on chart style and chart options, see chapter ["Display Options" on page 344](#).
- 10** Select attributes in the **1st Field** and **2nd Field** boxes in the *Chart Content* set.
 - Selected attributes to generate Chart Content may not include Text Attributes (alphanumeric or HTML enabled), Date Attributes, or Special Attributes (those enclosed in <>).
 - When working with **list attributes**, you may optionally select the **Include Zero Value Data** option. Selecting it will include values with count 0 in the totals.
 - When working with **group attributes**, you may define which sub-attribute you wish to use by selecting it from the **Level** box. In addition, you may optionally select the **Include Zero Value Data** option. Selecting it will include values with count 0.
- 11** If desired, set the color for the report values. For more information on defining value colors for graphical reports, see section ["Defining Colors for Report Data" on page 345](#).
- 12** Select the start date for your report from the **Start Date** box. The list contains a number of entries which define the start date in relation to the current date. The allows the user to select, for example, a date one week or one month prior to execution with results always down for that period. To define a fixed start date, follow these steps:
 - a** Select **Since** from the **Start Date** box. This shows a date box next to the **Start Date** box.
 - b** Click the calendar symbol in the date box.
 - c** Select the desired date.
- 13** Select the end date for your report from the **End Date** box. You can select **Today** or **Until**. To define a fixed end date, follow these steps:
 - a** Select **Until** from the **End Date** box. This shows a date box next to the **End Date** box.
 - b** Click the calendar symbol in the date box.
 - c** Select the desired date. Note that the date must not be in the future.
- 14 Preview:** Click this button to run the report without saving the report or closing the dialog.
- 15 Save:** Click this button to save and run the report. The dialog will close.

**TIP**

Drill down is available in graphical reports. If, for example, your report is a bar chart, clicking on a bar in the report lists the data behind the bar.

GANTT Reports

Complete these steps to create a GANTT report:

- 1** Select **Graphical Report** from the **New** menu. The *Graphical Report* dialog opens.
- 2 Class:** Select the desired class from the list.
- 3** Select **GANTT** from the **Type** box.
- 4** If you want to save the report:
 - a** Enter a name in the **Name** box.
 - b** Type a description of the report in the **Description** box. The maximum number of characters is 1024.
- 5** In the **Category** list, select the category in which the report will be saved.
- 6** Do any of the following:
 - Public Report:** Select this box to make the report public, otherwise the report is private.
 - Visible for:** This option is only available if Public Report is selected. Typically defaults to All, which means all those with access to the category in which the report resides. Specific groups may be selected from the list.
 - Editable for:** This option is only available if Public Report is selected. Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.
 - Show in Subcategories:** If checked the report is accessible in subcategories of the category in which it was saved. Reports useful for all users are typically created in or moved to the root category.
 - Users who do not have access to the root category** will be able to run the report from all subcategories to which they do have access.
- 7 Attribute Constraints:** As needed, to limit selection to requirements containing the attribute content specified. See ["Attribute Constraints Tab" on page 44](#).
- 8 Relationship Constraints:** As needed to limit selection to requirements included in named containers or to those with specified links. See ["Relationship Constraints Tab" on page 51](#).
- 9 Display Options:** Select attributes in the **Start Date**, **End Date**, **Item Label** and **Additional Columns** boxes in the *Chart Content* set. See chapter ["Display Options" on page 344](#).
 - Preview:** Click this button to run the report without saving the report or closing the dialog.
 - Save:** Click this button to save and run the report. The dialog will close.

Traceability Options

You can filter the results of a graphical report by linked requirements. This allows users to show only requirements linked to at least one of the specified classes. If desired, you could filter even further by only including requirements where the linked requirement(s) have one or several attribute values.

To limit results to requirements which have links to one or several classes:

- 1 Edit the desired graphical report.
- 2 Select the **Attribute Constraints** tab.
- 3 Click **Restrict by Related Class**. This opens the **Select Restricted Classes** dialog.
- 4 Expand and select the classes which a requirement must link to in order to be included into the result list.
- 5 Click **Save**. This closes the **Select Restricted Classes** dialog and shows the **Class** selector on the **Attribute Constraints** tab.

To define attribute constraints for a related class, do the following:

- 1 Select the **Attribute Constraints** tab.
- 2 From the **Class** selector, select the class for which you want to define attribute constraints.
- 3 Define the attribute constraints as desired.
- 4 Repeat steps 2 and 3 for any other class you want to define attribute constraints for.

Defining identical relationship constraints for related classes

If you define identical relationship constraints for the related classes, this means that all requirements (result and linked requirements) must fulfill the same relationship constraints, e.g. be part of the same document.

To define identical relationship constraints:

- 1 Select the **Relationship Constraints** tab.
- 2 Ensure that the **Apply for all classes** option is selected.
- 3 Edit the relationship constraints.

To define individual relationship constraints for related classes

If you define individual relationship constraints for the related classes, this means that there may or may not be relationship constraints for the result and linked requirements. For example, the result requirement may be required to be in one document, while a linked requirement may be required to be in a collection.

To define individual relationship constraints:

- 1 Select the **Relationship Constraints** tab.
- 2 Clear the **Apply for all classes** option.
- 3 From the **Class** selector, select the class for which you want to define relationship constraints.
- 4 Define the relationship constraints as desired.
- 5 Repeat steps 3 and 4 for any other class you want to define relationship constraints for.

Display Options

Chart Style

To change the chart style, do the following:

- 1 Edit the desired graphical report.
- 2 Select the **Display Options** tab.
- 3 Expand the **Chart Style** section.
- 4 Select the desired style from the drop-down list.

Chart Content

The chart content differs for distribution reports and trend reports. Please refer to the following chapters for chart content: ["Distribution Reports" on page 338](#) and ["Trend Reports" on page 340](#).

To edit the chart content settings, do the following:

- 1 Edit the desired graphical report.
- 2 Select the **Display Options** tab.
- 3 Expand the **Chart Content** section.
- 4 Change the desired settings.

Chart Options

The chart options specify how to visualize the report data. The chart options depend on the selected chart style. For "Tabular" style see ["Tabular Options" on page 345](#), for all other styles see ["Common Options" on page 344](#).

Common Options

1 Tooltip Options

- **Show tooltips:** If selected, a tooltip is displayed when hovering report data.
- **Tooltip value type:**
 - **Absolute values:** The tooltip shows the count for the related data.
 - **Percentage values:** The tooltip shows the count for the related data in percent. This setting is only available for Pie charts.

2 Label Options

- **Show label values:** If enabled, the values for x-axis and y-axis are displayed.
- **Label value type:**
 - **Absolute values:** Shows the count for each data (e.g. bar on a 2D bar report).
 - **Percentage values:** Shows the count for each data in percent. This setting is only available for Pie charts.
 - **No values:** Shows only the attribute values for each data.

3 Legend Options

- **Show legend:** If selected, shows the legend underneath the x-axis.

4 Axis Options

- **Show x-axis name:** If selected, shows the label for the x-axis (e.g. attribute name).
- **Show y-axis name:** If selected, shows the label for the y-axis (e.g. count).

Tabular Options

- Colors can be defined for Tabular Reports.

Sorting Options

- Row Sorting
 - Alphabetical: Sorts row values by alphabet (e.g. 1, 11, 111, 2, 3, a, b, c)
 - Numerical: Sorts row values by number (e.g. 1, 2, 3)
- Column Sorting
 - Alphabetical: Sorts column values by alphabet (e.g. 1, 11, 111, 2, 3, a, b, c)
 - Numerical: Sorts column values by number (e.g. 1, 2, 3)

Defining Colors for Report Data

To define the color for a display value in the report, do the following:

- Select the **Display Options** tab.
- Expand the **Chart Options** set.
- Click **Add Color**. This creates a new row.
- For list attributes:** In the **Value** box of the new row, select the desired value or keep the value **(None)** for empty attribute values.

For text attributes: Type the desired text into the **Value** box of the new row or leave it empty for empty attribute values.
- Select one of the predefined colors or define one color in the color picker.



NOTE Choosing Colors

For Distribution Reports:

- When only the **Row** setting is defined, colors can be specified for values of the attribute specified in the **Row** box.
- If the **Column** setting is defined, only the color for values of the attribute specified in the **Column** box may be specified.

For Trend Reports:

- When only the **1st Field** setting is defined, the color for values of the attribute may be selected.
- If the **2nd Field** setting is defined, only the color for values of the attribute specified in the **2nd Field** box may be selected.

Creating a Relationship Report

This section describes, in detail, the creation of Relationship Reports. For general instructions on editing reports, see ["Editing a Report" on page 351](#)

The relationship report allows users to display for review the links between the classes on either side of a relationship. The report can be limited to all objects in a document, a baseline, or those assigned to a particular release, with output clearly indicated all links, as well as all gaps.

To run a relationship report:

Select **Relationship Report** from the **New** menu.

The **Relationship Report** dialog consists of eight tabs with additional detail available when defining the Matrix:

- [General Tab](#) - Select primary and secondary classes, report name and description, access and storage.
- [Report Type tab](#) - Select display and level of compliance.
- [Constraints Source/Constraints Target Tab](#) - Restrict selection based on attribute content in source (primary), target or both.
- [Container Source/Container Target Tab](#) - Restrict selection based on container (document, snapshot, collection and/or baseline) for source (primary), target or both.
- [Display Source/Display Target Tab](#) - Choose attributes to display for source (primary), and target.
- [Using the Matrix View](#) - Assign colors to identify intersections

General Tab

1 Select the Primary and Secondary Classes to be used in the Relationship report.

Relationships connect primary (e.g., User or Business) and secondary (e.g., functional or use case).

2 If the report is to be saved for reuse.

- a Enter a name in the **Name** box.
- b Enter an optional **Description**; this is displayed when users hover over the report name.
- c In the **Category** list, select the category in which the report will be **saved**.

3 To make the report public:

Public Report: Select this box to make the report public, otherwise the report is private.

Visible for: This option is only available if Public Report is selected. Typically defaults to All, which means all those groups with access to the category in which the report resides. Specific groups may be selected from the list.

Editable for: This option is only available if Public Report is selected. Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.

4 Show in Subcategories:

If this box is checked the report is accessible in subcategories of the category in which it was saved.

When reports are stored in the root category, users without root access will be able to run the report from all subcategories to which they do have access.

Report Type tab

1 Select a **Report View**:

- **Table View:** The report is displayed as a grid with the source requirements on the left side of the report and the linked target requirements on the right.

In the Table view, as with Traceability Reports, the **Link Existing** icon  is available as you hover over the end of each row, in each of the columns in the output. Clicking this icon will raise the dialog to find and link a requirement to the one in the selected entry. See ["Create Link or Link Existing" on page 147](#).

- **Matrix View:** The report is displayed as a matrix with the source requirements as rows and the target requirements as columns. Related requirements are marked at the intersection of column and row.

If the **Show target items as rows** option is selected, the source requirements are shown as columns and the target requirements are shown as rows. Additional links may be created, or existing links deleted.

For additional details see ["Using the Matrix View" on page 348](#).

2 **Compliance Type:** For each type selected from the menu, an example is displayed.

a **Full (compliance and non-compliance):**

All **selected requirements in the primary class** with and without links to secondary.

Check the box to include secondary without links to primary.

or

All **selected requirements in the secondary class** with and without links to primary

Check the box to include primary without links to secondary.

b **Compliance only:** The report lists either:

All **selected requirements** in the primary class with links to selected requirements in the secondary class

or

All **selected requirements** in the secondary class with links to selected requirements in the primary class.

c **Non-Compliance only:** This report is only available if the Table View options is selected.

All **selected requirements in the primary class** with no links to selected requirements in the secondary class

All **selected requirements in the secondary class** with no links to selected requirements in the primary class

Constraints Source/Constraints Target Tab

This tab is used to filter the requirements to be collected based on the specified attribute content. For example, all Source (primary) objects in the selected category assigned to a particular release.

For details for populating attribute constraints see ["Attribute Constraints Tab" on page 44](#).

Container Source/Container Target Tab

Reports intended for review by stakeholders are often based on a container. When creating a report that must be repeatable, a baseline holding both source and target objects is recommended, for in such a baseline the links are also baselined.

For details when selecting containers holding source and/or target requirements. See ["Relationship Constraints Tab" on page 51](#).

Display Source/Display Target Tab

In this tab we decide which attributes will be included in the final Relationship Report. The **Preview** button is available to see how it will look before saving and running the report.

The selection of attributes from source and target is performed by highlighting one or more attributes and moving them from the column on the left to that on the right. For additional details see ["Display Options Tab" on page 53](#).

- 1 **Preview:** Click this button to run the report without saving the report or closing the dialog.
- 2 **Save:** Click this button to save and run the report. The dialog will close.

Using the Matrix View

- Only one attribute each is displayed for source and target
- 1 The colors of intersections have this meaning:
 - **gray:** There is no link between the requirements.
 - **blue:** The requirements are linked.
 - **red:** The requirements are linked, but suspect.
 - 2 If the **Show target items as rows** option is selected, the source requirements are shown as columns and the target requirements are shown as rows.
 - 3 To create a link between two requirements do the following:
 - a Click the gray square where both requirements intersect. This opens the **Create Link** dialog.
 - b Click **OK** to create the link.
 - 4 To delete the link between two requirements do the following:
 - a Click the blue or red square where both requirements intersect. This opens the **Delete Link** dialog.
 - b Click **OK** to delete the link.
 - 5 To clear a suspect link between two requirements, do the following:
 - a Right-click the red square where both requirements intersect.

- b Select **Resolve Suspicion** from the shortcut menu. This opens the **Resolve Suspicion** dialog.
- c Click **OK** to resolve the suspicion.

Creating a Traceability Report

This section describes, in detail, the creation of Traceability Reports.

For general instructions on editing reports of any type, see ["Editing a Report" on page 351](#)

Traceability reports support 2 modes, **Matrix** and **Coverage**.

Matrix: In this mode, the requirements are presented as a table. From left to right, you can identify which requirement has linked requirements (along with the data you specify) and which one does not that match the attribute constraints.

Coverage: In this mode, the result table shows the percentage/count of requirements that have linked requirements which do or do not match the constraints.

Percentage: Shows the percentage of requirements with links and matching constraints. Clicking the percentage value in the result shows all requirements that were checked for coverage.

Covered: Shows the total number of requirements with links and matching constraints. Clicking **Covered** shows only those requirements.

Not Covered: Shows the total number of requirements that either have no links or not matching the constraints. Clicking **Not Covered** shows only those requirements.

Trace Graph: Provides a visualization of the selected classes and relationships with a category, product or project, making it easier to understand the trace breakdown and progress.

Select **Traceability Report** from the **New** menu.

Top-level class: Select the root class for the report.

Type: Select **Matrix** or **Coverage**

To Save the Report:

Name: Enter a name in the **Name** box.

Description: Type a description of the query in the **Description** box. The maximum number of characters is 1024.

Category: From the **Category** drop-down, select the category in which the query will be saved.

To make the report public:

Public Report: Select this box to make the report public, otherwise the report is private. Permission must be granted in the Reports section to create a Public Report.

Visible for: This option is only available if Public Report is selected. Typically defaults to All, which means all those groups with access to the category in which the report resides. Specific groups may be selected from the list.

Editable for: This option is only available if Public Report is selected. Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.

Show in Subcategories:

If checked the report is accessible in subcategories of the category in which it was saved.

When reports are stored in the root category, users without root access are able to run the report from all subcategories to which they do have access.

Related Classes to Display tab:

Select the Relationships: Check the boxes next to the classes to specify the relationships that should be displayed in the traceability report.

The selected Top-Level class is pre-checked.

To avoid cyclic dependencies, the check boxes next to relationships that are already used are also selected and disabled.

You do not have to select consecutive classes.

Constraints: As needed, specify criteria to locate the desired requirements.

["Quick Find and Advanced Search" on page 42](#)

["Relationship Constraints Tab" on page 51.](#)

Display Options: The Display Options tab is only visible if the selected type is Matrix.

As needed, specify how to display the results. Depending on the number of classes expected, you might want to limit the attributes displayed for each of the classes included in "Related Classes to Display" - however, all attributes are available for selection.

See ["Display Options Tab" on page 53.](#)

In the final report the **Link Existing**  is displayed as you hover over the end of each row, in each of the columns in the reports. Clicking this icon will raise the dialog to find and link a requirement to the requirement referenced in the selected entry. See ["Create Link or Link Existing" on page 147.](#)

Group By: Available if selected Type is **Coverage**.

Contains these sections: **Collections**, **Baselines**, **Documents** and **Snapshots**. By selecting one or several entries from the lists, the result will be calculated in separate columns, one column for each selection.

Display Options: As needed, specify the attributes to include in the report.

See ["Display Options Tab" on page 53](#) for display details and report examples.

View Script / View Wizard:

Click to toggle between the Wizard and Script views of the dialog. Although most functions are now available using the Wizard, selecting Script View allows users to add SQL-like functions to a basis report created using the wizard (see ["Customizing and Scripting" on page 619](#)).

Once the script has been modified, the Wizard will no longer be available.

Select one of the following:

Preview: Click this button to run the report without saving the report or closing the dialog.

Save: Click this button to save and run the report. The dialog will close.

Cancel: Click this to exit without saving changes.

Working in the Traceability Report and Trace Graph

Traceability is one of several goals of requirements management. It provides the roadmap showing how the business and customer needs were met and validated through out the product lifecycle. If there are gaps, they will be evident, if a test step has failed, it will be reported both through traceability and testing, see ["Working with Test Management" on page 410](#).

Traceability > Release 12.2.1 Business thru Test Case

Business_Requirement		Functional_Requirement		Test_Case	
Rqmt ID▲	Title	Rqmt ID▲	Title	Test ID▲	Description
				TC_0011	Submit Work ... Submit a new Work Product Task
				TC_0012	Close Work Pr... Finalize the assigned Work Product Task
		FR_0022	Scope of a task	TC_0011	Submit Work ... Submit a new Work Product Task
				TC_0012	Close Work Pr... Finalize the assigned Work Product Task
BR_0021	Work product list for CCB	FR_0003	Selection process t...	TC_0004	Specify impact... Specify in the Analysis process the impacted work pro...
BR_0022	Support for skill based teams				
BR_0023	Substitution and replacement	FR_0002	Substitution and re...	TC_0003	Replacement f... Assign Task to different user with same role profile
		FR_0005	Substitution	TC_0003	Replacement f... Assign Task to different user with same role profile
BR_0024	Release reassignment acc...	FR_0001	Release	TC_0001	Assign Chang... Assign Change Items from a list to one or more Relea...

The Trace Graph can summarize a traceability report, making it easier to visualize status, and to spot trends. Both reports are tools. Objects can be opened, gaps analyzed, issues addressed, and the report refreshed.



Figure 6-2. The Trace Graph makes the data's message immediately clear.

Editing a Report

The report **Edit** action follows the tabs used to create the report. Please note that for each tab of the report creation and edit the [?](#) help link is available.

To edit a report:

- 1** Select the desired report in the Reports tab of the Home View.
- 2** Click **Edit** in the **Reports** set of the **Actions** pane. Depending on your report either the edit dialog for the report type or the **Query By Script** dialog opens. The former is the wizard version of the dialog and is the default; the latter allows direct editing of the SQL-like script, and opens if the script has been modified such that it can no longer be processed by the wizard.
- 3** To save the report with a new name:
 - a** Enter the name in the **Name** box.
 - b** Type a description of the query in the **Description** box. The maximum number of characters is 1024.
 - c** In the **Category** list, select the category in which the query will be saved.
- 4** As needed, modify the fields specific to the type of report you are editing:

Public Report: Select this box to make the report public, otherwise the report is private. Permission must be granted in the Reports section to create a Public Report.

Visible for: This option is only available if Public Report is selected. Typically defaults to All, which means all those groups with access to the category in which the report resides. Specific groups may be selected from the list.

Editable for: This option is only available if Public Report is selected. Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.

Show in Subcategories: If checked the report is accessible in subcategories of the category in which it was saved. Reports useful for all users are typically created in or moved to the root category.

Users who do not have access to the root category will be able to run the report from all subcategories to which they do have access.

Preview: Click this button to run the report without saving the report or closing the dialog.

Save: Click this button to save and run the report; if the name was not changed a warning will be raised, select OK to replace.

Class Report - Class: Select the desired class from the list.

Relationship Report - Select Primary and Secondary Classes from the list.

Relationship Report - Report Type tab: Select a report type:

Report Type	Description
Full (compliance and non-compliance)	The report lists all requirements in the primary and secondary class, whether or not they are linked to each other.
Compliance only	The report lists either: • All matching requirements in the primary class that have links to matching requirements in the secondary class • All matching requirements in the secondary class that have links to matching requirements in the primary class
Non-Compliance only	The reports lists either: • All matching requirements in the primary class that have no links to matching requirements in the secondary class • All matching requirements in the secondary class that have no links to matching requirements in the primary class

A sample of the selected report type is displayed on the right side of the dialog.

Traceability Report - Top-level class: Select the root class for the report.

Traceability Report - Related Classes to Display tab:

Select the check boxes next to the classes to specify the relationships that should be displayed in the traceability report.



NOTE Selecting Related Objects

- The check box next to the top-level class is always selected and disabled.
- To avoid cyclic dependencies, the check box next to relationships that are already used is selected and disabled.
- You do not have to select consecutive classes, follow your links.

- 5 Constraints:** As needed, specify criteria to locate the desired requirements. See ["Quick Find and Advanced Search" on page 42](#) and ["Relationship Constraints Tab" on page 51](#).
- 6 Display Options:** As needed, specify how to display the results. See ["Display Options Tab" on page 53](#).
- 7 Display Options:** As needed, specify the attributes to include in the report. See ["Display Options Tab" on page 53](#) for display details and report examples.
- 8 View Script / View Wizard:** Click to toggle between the Wizard and Script views of the dialog. Although most functions are now available using the Wizard, selecting Script View allows users to add SQL-like functions to a basis report created using the wizard (see ["Customizing and Scripting" on page 619](#)).

Once the report has been modified in the script, the Wizard will no longer be available.

- 9 Do any of the following:
 - **Preview:** Click this button to run the report without saving the report or closing the dialog.
 - **Save:** Click this button to save and run the report. The dialog will close.

Renaming Reports

To rename a report without first opening for execution:

- 1 Open the **Reports tab** on the Home View.
- 2 Highlight the report
- 3 Click on **Rename** in the **Actions** pane
- 4 Enter the new name in the **Name** text box
- 5 Click on **Save**

Deleting Reports

To delete a report:

- 1 Highlight the desired report in the **Reports tab** of the Home View.
- 2 Click **Delete** in the Reports group of the Actions pane. A confirmation dialog opens.
- 3 Click the **OK** button.

Exporting Reports

Everything managed within Dimensions RM can be exported.

For complete details concerning the export of Reports, Collections, Baselines, Categories, Documents, or Snapshots, please see ["Exporting Requirements" on page 141](#).

Moving and Copying Reports to a Different Category

You can move, or save a copy of, a report to another category.

To move a report to another category, do the following:

- 1 From **Home**, select the desired category.

- 2 Select the **Reports** tab.
- 3 Drag the report and drop it on the desired category in the **Categories** tree.

To copy a report into another category:

- 1 From **Home**, select the desired category.
- 2 Select the **Reports** tab.
- 3 Highlight the desired report.
- 4 Click **Edit** in the **Reports** group of the **Actions** pane. This opens the edit dialog for the selected report.
- 5 **Category:** Select the desired category.
- 6 Do one of the following:
 - To **save a copy** of the report to the selected category, modify the **Name** of the report and click the **Save** button.
 - To **move** the existing report to the selected category, click the **Save** button.

Copying the URL of a Report to the Clipboard

You can copy the URL of a report and paste it into a file for future use and reference. When that URL is later invoked, it will open RM Browser to that report.

To copy the URL of a report:

- 1 From **Home**, select the **Reports** tab.
- 2 Select a report.
- 3 Click **Create direct URL** in the **Reports** section of the Actions pane. This opens the **Direct URL** dialog.
- 4 Right-click the URL and select **Copy link address**. This copies the URL to the clipboard.
- 5 Click **Close** to close the dialog.
- 6 Press **Ctrl + V**, or the relevant application-specific menu command, to paste the URL into the file or application where you wish to use it.

Modifying the URL of a Report

After pasting the URL into a file or application, you can also add parameters to it, which allows additional features. If you do not supply runtime parameters in the URL, you can specify them when running the report.

Function	Description	Example URL
Hide Title Bar	By default, the report shows a title bar with information about database, instance and path to the report. To hide the title, add &hideTitleBar=true to the URL.	<code>http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=report&db=ORCL&proj=RMDemo&reportID=1141&hideTitleBar=true</code>
Show Trace Report in Outline View	To view a trace report in Outline View, add &outlineView=1 to the URL.	<code>http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=report&db=ORCL&proj=RMDemo&reportID=1141&outlineView=1</code>
Using Runtime Parameters	You can filter report results by using runtime parameters. These parameters can be used on any report. To add a runtime parameter, add &<Parameter Name>=<value> to the URL. When providing runtime parameters, the value must be URL encoded (e.g. Café translates to Caf%C3%A9).	<code>http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=report&db=ORCL&proj=RMDemo&reportID=3522&RTP__VERIFICATION_LEVEL_1=System</code>
Using Multiple Values for a Runtime Parameter	You can use several values for a runtime parameter by combining the values with a symbol, e.g. &TRP__VERIFICATION_LEVEL_1=System Module .	<code>http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=report&db=ORCL&proj=RMDemo&reportID=3522&RTP__VERIFICATION_LEVEL_1=System Module</code>

Retrieving Runtime Parameter Names

To get the names of the runtime parameters used in a report:

- 1 Paste the URL of the report into a text editor, e.g. Notepad. This URL will be referenced as **Report URL**.
Example URL: `http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=report&db=ORCL&proj=RMDemo&reportID=3522`
- 2 Copy the following URL to into a text editor: `http://host:port/rtmBrowser/RestServices/Report?id=<REPORT_ID>&db=<DATABASE>&proj=<INSTANCE>`
This URL will be referenced as **Rest URL**.

- 3 Adjust protocol (http or https), host and port of the Rest URL to match those of the Report URL.
- 4 Select the value of the **db** parameter of the **Report URL** and press **Ctrl + C**, or right-click on the highlighted value and select **Copy** from the shortcut menu to copy it to the Clipboard. In the example URL this value is *ORCL*.
- 5 Select **<DATABASE>** in the **Rest URL** and press **Ctrl + V**, or the relevant application-specific menu command, to replace it with the value you copied from the Report URL.
- 6 Select the value of the **proj** parameter of the **Report URL** and press **Ctrl + C**, or right-click on the highlighted value and select **Copy** from the shortcut menu to copy it to the Clipboard. In the example URL this value is *RMDEMO*.
- 7 Select **<INSTANCE>** in the **Rest URL** and press **Ctrl + V**, or the relevant application-specific menu command, to replace it with the value you copied from the Report URL.
- 8 Select the value of the **reportID** parameter of the **Report URL** and press **Ctrl + C**, or right-click on the highlighted value and select **Copy** from the shortcut menu to copy it to the Clipboard. In the example URL this value is *3522*.
- 9 Select **<REPORT_ID>** in the **Rest URL** and press **Ctrl + V**, or the relevant application-specific menu command, to replace it with the value you copied from the Report URL.
If you executed these steps with the example URL, the Rest URL would look like this:
`http://myserver:8080/rtmBrowser/RestServices/Report?id=3522&db=ORCL&proj=RMDEMO`
- 10 Select the complete **Rest URL** and press **Ctrl + C**, or right-click on the highlighted URL and select **Copy** from the shortcut menu to copy it to the Clipboard.
- 11 Open your preferred web browser and paste the URL into the address bar by pressing **Ctrl + V**. Then press **Enter**.
- 12 If you receive a dialog which requests user name and password, enter your RM user name and the associated password and confirm the dialog. In Internet Explorer, you might have to execute the following steps:
 - a Click Open in the **Do you want to open or save Report.json** bar.
 - b In the next dialog select the **Select a program from a list of installed programs** option and click **OK**.
 - c In the **Open with** dialog, select **Notepad** or another plain text editor.
 - d Clear the checkbox **Always use the selected program to open this kind of file**.
 - e Click **OK**.
- 13 Search for **RTP__** (note that there are 2 underscores).
- 14 Select the full parameter (e.g. *RTP__VERIFICATION_LEVEL_1*) and add it to your Report URL.
- 15 Add an equal sign and the URL encoded value (e.g. translates to *Caf%C3%A9*).
If you executed these steps with the example URL, the Report URL would like this:
`http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=report&db=ORCL&proj=RMDEMO&reportID=3522&RTP__VERIFICATION_LEVEL_1=System`

- 16** You can now use the Report URL in your file or application.

Compliance Reporting

The Dimensions RM Compliance Report is designed to help organizations use the data stored in Dimensions RM to assess adherence to corporate by-laws, rules, regulations, and standards - internal or external.

Some of the **Compliance** functionality can be included in traceability reports, or gathered into multiple reports to show progress on your dashboard. However, the Compliance Audit allows the organization to wrap a single report around all the rules and to limit the output to the errors. In addition,

For a set of categories or a release document, you might check that:

- All requirements have been assigned to the specified release.
- All objects contained in the release have been approved.
- All requirements relationships exist.
- All linked test cases have succeeded.

The Compliance Audit lists those objects that have failed to meet defined conditions.

The following Sections provide instructions for:

- creating a report: ["Creating a Simple Compliance Report" on page 358](#)
- compliance report execution: ["Executing a Compliance Report" on page 363](#)

Creating a Simple Compliance Report

There are three parts to the Compliance Audit:

- 1** General: Naming the report and describing goals:
["Compliance Report General" on page 358](#)
- 2** Scope: Establishing the extent of the reports coverage:
["Compliance Report Scope" on page 360](#)
- 3** Rules: Define the rules that must be met for compliance:
["Compliance Report Rules" on page 361](#)

Compliance Report General

To create or execute Compliance Reports select the Compliance tab on the Home View. If the tab is not available to you, please check the instructions in ["Home Settings" on page 73](#).

Complete the following steps to initiate report creation in the General Tab.

**CAUTION!**

As with all reports, if a user does not have "read" permission in a category, the requirements in that category are not returned in the query results, even if they satisfy the query requirements.

- 1 Select the Compliance tab from Home View.
- 2 Click on **New** to open the **New Compliance Audit >> General** Dialog.
- 3 **Enter a Name.**
- 4 Use the description attribute to define the goals.
- 5 Determine the accessibility of the report:

Public Report: Select this box to make the report public, otherwise the report is private. Permission must be granted in the Reports section to create a Public Report.

Visible for: This option is only available if Public Report is selected. Typically defaults to All, which means all those groups with access to the category in which the report resides. Specific groups may be selected from the list.

Editable for: This option is only available if Public Report is selected. Defaults to all groups with access to the category specified; edit permission may be limited to specific groups.

- 6 **Category:** This setting refers to the category in which the report will be saved, it defaults to the current category. You may configure using the drop-down.
- 7 **Show in Subcategories:** If checked the report is accessible in subcategories of the category in which it was saved. Reports useful for all users are typically created in or moved to the root category.

Users who do not have access to the root category will be able to run the report from all subcategories to which they do have access.

A sample Compliance, General Dialog:

- 8 View All / View Wizard:** Click to toggle between a dialog that allows the user to **View All** three parts of the Compliance Report (General, Scope and Rules) at once, or to view and populate each part individually in **View Wizard**.

In **View Wizard**, the Next button is used to move through each part.

In either **View All** or **View Wizard** input may be saved at any time.

- 9** In **View Wizard** mode, click on **Next** to proceed to the **Scope** Dialog.

Compliance Report Scope

In the Scope tab, we continue with the identification of all objects relevant to the report. The scope may include all objects in a category, or those included in a report, baseline, or document.

It is possible to expand the scope to include all objects linked to objects defined as in scope.

- 10** For scope you may choose to:

- Define Now - with redefinition or reassessment provided at run time.
- Defined on Run - leaving the Scope decisions for later.

We recommend defining the scope, but leaving room for a reassessment at run time, although this depends on your report target.

- 11** Should you chose Define Now Click on **Add Scope**, which raises the Scope >> Definition Dialog.

Objects are selected using a check mark, multiple items may be selected.

- a** Select the Scope Type. The Scope may be based on one or more **Categories**, **Containers** or **Reports**.

- b** If **Categories** is chosen, you may choose only the Current Category or you may include its subcategories.

Please Note: This choice of category does not refer to the category in which the **Compliance Audit** was created and/or saved, but the category from which it is executed.

- c** If **Containers** is chosen, choose the Document, Snapshot, Collection or Baseline that will be used to identify the relevant objects in the Compliance Report.

The category may be entered here as a filter to assist in object selection.

- d** If **Reports** is chosen, choose the report that will be used to scope the Compliance Report.

Type any characters contained in the report to filter the list.

- e** Click **OK**.

- 12 Include Linked Objects:** Check this box if you wish to include in scope all objects linked to selected objects. For this example, we have included the full release scope in the document.

A sample Compliance Scope Dialog - limiting the scope to only those objects contained in the release document.

- 13** In **View Wizard** mode, click on **Next** to proceed to the **Rules** Dialog

Compliance Report Rules



NOTE Mandatory report fields

Report fields that **must** have input prior to proceeding are listed in red.

In the rules tab the definition continues with one or more statements defining the requirements of the audit, for example:

- The workflow state of all Functional Requirements must be Approved.

- All Functional Requirements must be linked to at least one Test Case.
- 14** Enter the Rule Name - Rules may be selected and executed individually, so each should have a meaningful name. For example, FR Workflow Approved
 - 15** Enter the goal of the rule. For example, all Functional Requirements must be approved.
 - 16** Rules have one or more **Conditions**, and conditions have **Constraints**: The first condition should be ready for constraints.
 - 17** Click on **Add Constraint**. This will open a new line, with fields to be populated:
 - a** Select Type: Category, Class, Object Type or Title. In this example, we will choose Class.
 - b** Once the Type has been selected, the possible choices on the right will be listed. In our example, classes are listed, we chose Functional.
 - c** Click on **Add Constraint**, to further constrain the search to Function requirements NOT IN the state Approved.
 - 18** **Set the Count to zero.** We are reporting on the number of Functional Requirements with a Workflow that is **NOT approved**, only errors will be reported.
 - 19** **Save** the report.

To execute this report, please see ["Executing a Compliance Report" on page 363](#).

To add relationships to the Audit, see ["Expanding a Compliance Report" on page 364](#).

Simple Compliance Audit » Rules

▼ RULES 1

▼ FR Workflow Approved

Name: FR Workflow Approved

Description:

File Edit View Insert Format Tools Table

Paragraph B I A sans-serif 9pt

All Functional Requirements must be approved.

Conditions (1):

▼ Condition 1

▼ Source Constraints (2)

Class			Functional_Requirement
Workflow State	Functional_Requirement	not in	Approved Completed In Dev In Test Proposed

Add Link Constraint

Count: = 0

View All < Prev Save Cancel

Figure 6-3. A Basic Compliance Report

Executing a Compliance Report

- 1 Select the Compliance tab from Home View.
- 2 Select a saved report from the drop-down, and click on **Run**, to raise the dialog.
- 3 If you have included the ability to modify the Scope at run-time, you may do so.
- 4 Compliance reports may be comprised of many rules, and these rules may be executed selectively.

Check the box next to the rule(s) to be executed and click on **Run**.



- 5 From the execution dialog, we can review the scope, which could consist of thousands of objects, or we can simply click on the 'Errors' tab to list the problems. We can link directly to the offending object and, perhaps, fix it and run the report again.

Some errors may be waived, for the life of the execution or until the issue is corrected. you may choose to **Waive** an error.

To waive a Compliance Error

- a Check the box to the left of the error,
- b Click on the Waive button, to raise the Waive dialog.
- c Enter a reason for waiving the error.
- d Continue execution of the report, the waived issue will continue to display.

Expanding a Compliance Report

Adding Relationships to Compliance

Compliance Reports can be expanded over time, new rules or conditions added to existing rules may be created as needs arise. The following adds a new rule to an existing report:

- 1 Select the Compliance tab from Home View.
- 2 Select a saved report from the drop-down, and click on the Edit pencil to open the dialog. You may use the **Next** button to skip the General and Scope dialogs to get to Rules or click on the **View All** button at the bottom of the dialog to scroll through the full report.
- 3 **Click on Add Rule**, to add a new rule to the existing dialog.
- 4 Enter the Rule Name - For this second example, we are including relationships, the Rule name might be "In FR to TC"
- 5 Enter the goal of the rule. For example: All Functional requirements must be linked to at least one Test Case.
- 6 The first **condition** is created with the rule, Click on **Add Constraint**, to open a new constraint line.
 - a Select type - Class in this example as we are checking the existence of a link/relationship between the objects in two classes.
 - b Once the Type has been selected, the possible choices on the right will be listed. In this example, choose the Functional Class.
 - c Click in **Add Link Constraint**.
 - d The link direction will default to any, which is fine for this example.

e Click on **Add Constraint**, to add the target constraint.

We will choose Class, in, Value, Test Case.

- 7 Count should be set to > (greater-than) zero, as there must be at least one link between each Functional Requirement and the Test Case.

✓ fr to tc ✓ 🗑️

Name: ✓

fr to tc

Description:

Functional must be linked to at least one test case

Conditions (1): ✓ + Add Condition

✓ Condition 1 ✓ 🗑️

✓ Source Constraints (1) ✓ + Add Constraint

Class in Functional_Requirement 🗑️

Remove Link Constraint

Link Direction:

Any

Any Link Direction. Both primary and secondary linked objects form the Target Scope.

✓ Target Constraints (1) ✓ + Add Constraint

Class in Value Test_Case 🗑️

Count: ✓

> 0

Any rule or combination of rules is accepted in the compliance report, and the rules may be defined separately and executed separately. This means that segments of a large compliance audit may be run by different application teams at different times.

All attributes contained in a class, or all titles in a document may be evaluated. Choosing, for example, a requirement class, additional constraints can be added until we have ensured that all is as it should be.

To the test for existing relationships we can added constraints to ensure that each related test case has Passed testing.

Chapter 7

Working with Collections and Baselines

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Managing Requirements in a Collection

Collections are named groups of objects selected from one or more classes.

Collections allow users to gather requirements for assignment, for integration support, for review, or for baseline creation. As with all containers in Dimensions RM, collections do not contain copies of requirements, but links to a version of a requirement, typically the current version.



CAUTION!

When the content of a collection is displayed, users see only those requirements for which they have read access.

The following sections discuss additional Collection related Functions:

["Listing the Content of a Collection" on page 368](#)

["Creating a New Collection" on page 369](#)

["Adding Requirements to a Collection" on page 370](#)

["Removing Requirements from a Collection" on page 371](#)

["Deleting a Collection" on page 371](#)

["Undeleting a Collection" on page 372](#)

["Removing a Collection" on page 372](#)

["Refreshing the Contents of a Collection" on page 372](#)

["Updating Collection Properties" on page 373](#)

["Modifying the URL of a Collection or Baseline" on page 382](#)

Listing the Content of a Collection

From Home View:

- 1 Select Collections tab.

With the 'Include Sub-directories'  folder open, all collections in categories to which you have access are listed.

To assist with selection, use the Columns button to include additional attributes in the display, e.g., Created by or Work Flow.

- 2 To list content, double-click the desired collection or select and click on **View Content** under Collections in the Action pane.

From Quick Search:

- 1 **Select Classes**

Complete the Quick Search settings, ensuring that you have selected 'All Classes' or at least all classes contained in the Collection.

- 2 Collections can be Favorites

Include the collection under Containers. Note that, like Categories, Collections can be marked as Favorites.



Creating a New Collection

To create a collection:

- 1 Select **Collection** from the New menu. The New Collection dialog is opened.
- 2 **Collection Name:** Enter the name of the new collection.
The Maximum Length for a Collection Name is 256.
- 3 **Description:** Enter a description of the collection. The maximum length of the description is 512 characters.
- 4 **Category:** Select an owning category from the list.
- 5 **Collection Rules:** Define the collection link rules to determine what happens to object links when you edit objects included in the collection. The options include the following:

Add new version to collection on Edit & Save: When an object contained in this collection is edited, the link is transferred to the new object. Best practice is to check this box and, when a fixed (immutable) object list is needed to Baseline the Collection.

Delete old version from collection on Edit & Save: When an object contained in this collection is edited, the link is transferred to the new object and the original object is deleted. Best practice is to check this box, leaving it unchecked will cause multiple versions of a single requirement to be contained in the collection.

Revert to previous version on Remove: If this box is checked, when an object is **Removed** from the instance the link is transferred to the parent, if a parent exists. This box is unchecked by default.

Objects can be added/removed: If this box is checked, the collection is active, requirements can be added or removed from the collection. This box is checked by default.

Remove deleted objects from collection: If this box is checked, objects marked as deleted will be removed from the collection. The default is to leave deleted objects in the collection, as they remain in the instance, but will be marked as deleted.

Use these rules as the default for new collections: Check this box to apply the selected collection rules to all new collections in the future.

- 6 **Based on:** Select one of the following options to determine how the collection is initially populated:

Empty Collection: Select this if you do not want to base the new collection on an existing container

Selected Container(s): Selecting this will raise the **Add Containers** dialog. Using check boxes, select one or more containers from existing types: Collections, Documents, Snapshots or Baselines. The new Baseline will contain all requirements from selected container(s). See ["Adding Containers to a Baseline" on page 375](#).

Query: First choose **Category** from the drop-down, and then the report name.

If the list is long, use the **Find Query** filter at the bottom of the dialog to filter on report name.

7 Click OK.

Collections allow users to gather requirements for assignment, for integration support, for review, or for baseline creation. **Actions** available from the collection include:

Compare: The ability to compare two baselines or a baseline and a collection. For details see ["Comparing Collections or Baselines" on page 379](#).

Browse Links: Show the link graph for the collection contents, can be interesting. For details see ["Using Link Browser" on page 162](#).

Resolve Suspicion: Clear suspicion on direct links from each object in the collection; this may require a **Reason**. For additional information see ["Suspect Links" on page 158](#).

For additional functionality, see:

["Adding Requirements to a Collection" on page 370](#)

["Removing Requirements from a Collection" on page 371](#)

["Deleting a Collection" on page 371](#)

["Undeleting a Collection" on page 372](#)

["Removing a Collection" on page 372](#)

["Refreshing the Contents of a Collection" on page 372](#)

["Updating Collection Properties" on page 373](#)

Adding Requirements to a Collection

There are several ways to add requirements to a Collection. New Collections, as discussed in ["Creating a New Collection" on page 369](#), can be populated during creation.

Requirements can be added from the Quick Search, or from any list of objects,

- 1** Select one or several requirements in a work pane.
- 2** Select **Add to Collection** from the **Requirements** set of the **Actions** pane.
- 3** From the "Add to Collection" dialog, select the desired collection or collections. Use the filters across the top to limit the selection.

- 4** Click **OK**.

When larger groups of requirements must be added to a collection, **use Organize by Collection**.

- 1** If the collection is not already open, open it to a work page.
- 2** Select **Organize by Collection** from the Collections group of the Actions pane.
- 3** **Look for Class:** Select the class in which you want to search for requirements.

- 4 Filters:** If you saved filters in Quick Search, you can use these filters to add to the collection.
- 5 Constraints:** As needed, specify criteria to locate the desired requirements.
See ["Quick Find and Advanced Search" on page 42](#) and ["Relationship Constraints Tab" on page 51](#).
- 6 Display Options:** As needed, specify how to display the results.
See ["Display Options Tab" on page 53](#).
- 7 Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog.
- 8 New Search:** Click this button to clear the current search criteria and results.
- 9** Select the desired requirements in the search results. For multi-selection of requirements, see chapter ["Methods for Listing Requirements" on page 100](#).
- 10 Collection:** Select the collection to which you want to add or remove requirements.
- 11** Click one of the following buttons:
 - Add:** To add the selected requirements to the collection.
 - Remove:** To remove the selected requirements from the collection.

Removing Requirements from a Collection

From any list of requirements or from an open requirement, objects can be removed from collections.

Using the Remove from Collection Action:

- 1** Select one or several requirements from any list.
- 2** Select **Remove from Collection** from the **Requirements** set of the **Actions** pane.
- 3** Select the relevant collection or collections.
- 4** Click **OK**.

Using Remove from Container in a Requirement Open for Edit:

- 1** Expand the **Containers** section.
- 2** Select the Collection from which the requirement should be removed.
- 3** Click  .

Deleting a Collection

When you delete a collection, it is marked as deleted. Content can no longer be added to a deleted collection and it is hidden from the list of collections, including that on the Collections Tab unless the Action: **Show Deleted Collections** is selected.

To permanently remove a collection, use the **"Remove"** function (see ["Removing a Collection" on page 372](#)).

To delete a collection:

- 1 From Home View, select Collections Tab.
- 2 Select one or several collections.
- 3 Click **Delete** in the **Collections** set of the **Actions** pane.
- 4 Click **OK** to confirm deletion.

Undeleting a Collection

When you delete a collection, it is marked as deleted, but the data is retained. When you undelete a collection, the collection is restored.

To undelete a collection:

- 1 From Home View, select Collections Tab.
- 2 Click **Show Deleted Collections** in the **Collections** set of the **Actions** pane. Deleted collections appear in the list with gray text color.
- 3 Select one or several deleted collections.
- 4 Click **Undelete** in the **Collections** set of the **Actions** pane.
- 5 Click **OK** to confirm the Action.

Removing a Collection

Removing a collection removes the collection, not the contents, from the database **permanently**. Removed collections cannot be restored.

Collections can be marked as deleted using the Delete (see ["Deleting a Collection" on page 371](#)).

To permanently remove a collection:

- 1 From Home View, select Collections Tab.
- 2 Select one or several collections.
- 3 Click **Remove** in the **Collections** set of the **Actions** pane.
- 4 Click **OK** to confirm the Action.

Refreshing the Contents of a Collection

The contents of collections created based on queries/reports will change as the content of the project changes. It is possible for an instance administrator to set an option to automatically refresh all collections based on queries/reports. This setting defaults to off (unchecked) for reasons of both performance and control. To activate/deactivate this option, see chapter ["General Settings" on page 71](#).

If automatic refresh is off, the collection should be refreshed to include content modifications. To manually refresh the contents of a collection, execute these steps:

- 1 Open the Home View, see chapter ["Working with the Home View" on page 295](#).
- 2 In the **Requirements** set of the **Actions** pane, click **Refresh Collection**.



NOTE Container Refresh

The **Refresh Container** action will be grayed out if the selected collection is not based on a report (i.e., if the collection is static).

Updating Collection Properties

You can rename and change the description for a collection, and modify the collection rules that define how and whether new child objects should be included in the collection.

To edit the properties of a collection:

- 1 From Home View, select Collections Tab.
- 2 Select the relevant collection.
- 3 To open, click **Edit Properties** from the **Collections** set of the **Actions** pane.
- 4 Modify the name, description and collection rules as needed.
For details, see ["Creating a New Collection" on page 369](#).
- 5 Click **OK** to confirm your changes.

Managing Baselines

A **Baseline** is a frozen and labeled state, a milestone that can be used for comparison or review. Baselines can be created from **Collections**, **Categories**, **Hierarchies**, **Report (Query) output**, or the requirement object content of a **Document**

Note the following:

Baseline Content: The content of a baseline cannot be changed, however, the name can be changed or the baseline deleted by users with the appropriate permission.

Users may delete or rename baselines that they created, irrespective of assigned permissions.

Collections may be created from Baselines, or the content of a document may be populated from a Baseline.

Object Locking: Opening a requirement from within a baseline will display a lock in the Header. Changes applied to the baselined object will be saved as a new version; the baselined version remains unchanged.

Links between objects contained in the baseline are also baselined, and cannot be modified. Links applied to a baselined object will be saved as a new version; the baselined version remains unchanged.

Links cannot be removed or deleted from Baselined objects. An attempt to delete or remove a link between baselined objects will cause a message to be raised indicating

that before the link can be deleted, new version(s) must be created; the baselined version remains unchanged.

Suspect Links: Requirements with suspect links remain suspect even after they are baselined. Suspicion can be cleared, without modifying the baseline.

Workflow Transitions: Objects contained in a baseline may be transitioned. The new version is created; the baselined object is unchanged.

Baseline Content can be accessed from the Baselines tab in Home View.

The following sections discuss Baseline related Functions:

["Creating a New Baseline" on page 374](#)

["Removing a Baseline" on page 376](#)

["Updating Baseline Properties" on page 376](#)

["Copying the URL of a Collection or Baseline to the Clipboard" on page 381](#)

Creating a New Baseline

A **Baseline** is a frozen and labeled state, a milestone that can be used for comparison or review. **Collections, Baselines, Categories, Hierarchies, Report (Query) output, or the objects contained in a Document or Snapshot may be baselined.** T

The object content of a **Document** may be automatically baselined when creating a Snapshot (see ["Creating a Snapshot of a Document" on page 282](#)).

Before you begin:

Baseline content may be collected from one or more categories from either Category or Hierarchy context. **The selected categories must be siblings.** In order to maintain structure within a baseline, the parent of the categories will be included.

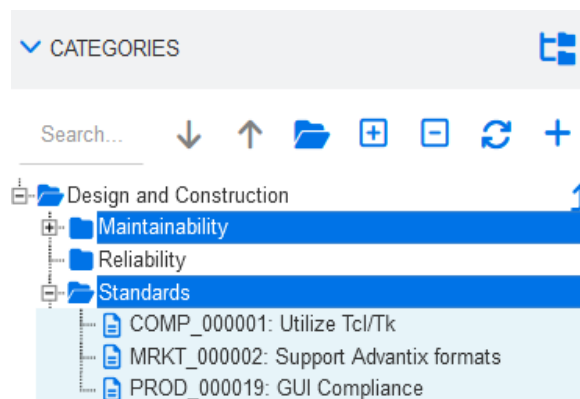


Figure 7-1. Multiple Categories may be input, but they must be Siblings

- 1 If baselining multiple categories, make the selection before initiating the baseline dialog.
- 2 Select **Baseline** from the New menu. The Create Baseline dialog opens.
- 3 **Name:** Enter a Baseline name.

The Maximum Length for a Baseline Name is 256 characters.

- 4 Description:** Enter the description of the baseline.
- 5 Category:** The category in which the Baseline will be stored; it cannot be changed. If baselining multiple categories, this will reflect the parent of the selected siblings.
- 6 Workflow:** An optional workflow may be selected.

Based on local process, the inclusion of the workflow may require the input of additional data.

- 7 Based on:** The content may be supplied from one of the following:

Container(s):

- a** Click  to raise the **Add Containers** dialog.
- b** Select Type: Collections, Documents, Snapshots or Baselines.
- c** Select containing Category.
- d** Using check boxes, select one or more containers from those listed.

The new Baseline will contain all requirements from selected container(s).

Query:

- a** Select the **Category** containing the query from the drop-down
Choosing the root category will list all available Reports.
- b** Expand section containing the Report type.
- c** Use the **Find Query** filter at the bottom of the dialog if the list is long.

Find Query design

Hierarchy:

The Category listed in [Step 5](#) will be both source and target for the baseline.

The Content of the Baseline will be listed: with the selection:

- ☒ Hierarchy (Include all objects from the 'Maintainability, Standards' categories with sub-categories)

- 8** Click OK.

Adding Containers to a Baseline

To select and add containers:

- 1 Type:** Select Container Type: Collection, Baseline, Document, Snapshot.
- 2 Category:** Locate the Category in which the baseline or collection shall be stored.
- 3** Using check boxes, select one or more containers from the list.

When the new baseline or collection is created, it will contain all requirements from selected container(s).

Removing a Baseline



CAUTION!

Removing a baseline removes the baseline from the database **permanently**. Removed baselines cannot be restored.

To remove a baseline:

- 1 From the main menu bar, select **Home**.
- 2 Select the **Baselines** tab.
- 3 Select one or several baselines.
- 4 Click **Remove** in the **Baselines** set of the **Actions** pane.
- 5 Click **OK** to remove the selected baseline or baselines.

Updating Baseline Properties

Users may change the name, unless created from Dimensions CM, the description, the category location or the workflow assignment.

To edit the properties of a baseline:

- 1 From the main menu bar, select the **Home** View.
- 2 Select the **Baselines** tab.
- 3 Select the desired baseline.
- 4 To open, click **Edit Properties** from the **Baselines** set of the **Actions** pane.
- 5 Modify the name, description, category or workflow assignment.
For additional detail see ["Creating a New Baseline" on page 374](#).
- 6 Click **OK** to confirm your changes.

Working with Parent Collections

About Parent Collections

A parent collection allows users to link the content of collections, baselines, documents, or snapshots. Parent collections provide access to all objects contained in the children. If an object is added to or removed from a child, the change is reflected in the Parent.

Parent collections are identified by the "(Parent)" suffix in their name.

Use Cases

Requirement Structure: Parent collections can help to structure requirements. The parent collection could, for example, represent a project, while child collections represent components or functions.

Cross Category Reference: Parent collections can be used to reference collections from other categories. To do this, you would first create the parent collection in the same category as the child and then move the parent collection to the desired category.

The following sections discuss additional Parent Collection related Functions:

["Creating a Parent Collection" on page 377](#)

["Adding a Child to a Parent Collection" on page 378](#)

["Removing a Child from a Parent Collection" on page 378](#)

Creating a Parent Collection

Parent collections can be created based on Documents, Snapshots, Collections or Baselines, once created they are always listed for selection under the Collections tab on the Home view

To create a parent collection:

- 1 From **Home**, select the **category**.
- 2 To create a parent collection for **documents** and/or **snapshots**, do the following:
 - a Select the **Documents** tab.
 - b Select one or several documents, or snapshots.
 - c Select **Create Parent Collection** from the **Documents** set of the **Actions** pane. This opens the **New Parent Collection** dialog.
 - d Continue with step 5.
- 3 To create a parent collection for **collections**, do the following:
 - a Select the **Collections** tab.
 - b Select one or several collections.
 - c Select **Create Parent Collection** from the **Collections** set of the **Actions** pane. This opens the **New Parent Collection** dialog.
 - d Continue with step 5.
- 4 To create a parent collection for **baselines**, do the following:
 - a Select the **Baselines** tab.
 - b Select one or several baselines.
 - c Select **Create Parent Collection** from the **Baselines** set of the **Actions** pane. This opens the **New Parent Collection** dialog.
- 5 **Name:** Enter a name for the parent collection.
The name should distinguish the collection as a parent.
- 6 **Description:** Enter a description of the baseline.
The maximum length of the description is 512 characters.
- 7 **Category:** Select the category in which the parent collection will be stored.

To **quickly locate** a category in the list, type the name of the category in the **Find** box of the expanded **Category** list.

- 8 To add additional children (collections, baselines, documents, or snapshots), do the following:
 - a Expand the **Child Containers** section.
 - b Click . This opens the **Add Child Containers** dialog.
 - c From the **Type** box, select **Collection**, **Baseline**, **Document**, or **Snapshot**.
 - d Select the check box next to the intended child name.
 - e Repeat steps c and d for any other children you want to add.
 - f Click **OK** to add all children to the parent collection.
- 9 Click **OK** to create the parent collection.

Adding a Child to a Parent Collection

To add a child to a parent collection:

- 1 From **Home**, select the **Collections** tab.
Parent collections are listed with collections.
- 2 Select the Collection.
The list may be filtered by Category.
- 3 Select **Edit Properties** from the **Collections** set of the **Actions** pane.
This opens the **Properties** dialog.
- 4 Expand the **Child Containers** section.
- 5 Click . This opens the **Add Child Containers** dialog.
- 6 From the **Type** box, select **Collection**, **Baseline**, **Document**, or **Snapshot**.
- 7 Select the check box next to the object(s) to be added.
- 8 Click **OK** to add all objects to the parent collection.
- 9 Click **OK** to update the parent collection.

Removing a Child from a Parent Collection

To remove a child from a parent collection:

- 1 From **Home**, select the **category**.
- 2 Select the **Collections** tab.
- 3 Select **Edit Properties** from the **Collections** set of the **Actions** pane.
- 4 Expand the **Child Containers** section.
- 5 Select the child or the children you wish to remove.
- 6 Click . This removes the selected children.

- 7 Click **OK** to update the parent collection.

Baseline and Collection Related Functions

This section discusses functions that are available for execution by either a baseline, a collection or, in the case of Compare, one of each:

[Comparing Collections or Baselines](#)

[Using Workflows with Collections or Baselines](#)

[Moving Collections or Baselines to a Different Category](#)

[Copying the URL of a Collection or Baseline to the Clipboard](#)

[Modifying the URL of a Collection or Baseline](#)

Comparing Collections or Baselines

To compare the contents of two collections or baselines:

- 1 From **Home** choose the Collection or Baselines Tab
- 2 Highlight the desired collection or baseline.
- 3 Click **Compare** from **Actions** pane.
This populates the **Base Container** in the Compare Container Dialog.
- 4 **Compare Container:** Click the  to select a second container.
Choose **Type** drop-down to choose a container of a different type.
Click the  to limit the list to your favorites.
Choose **Columns** to expand the information included in the list.
Choose the container used for comparison.
- 5 **Description:** Select this option to include the description in the results.
- 6 Click the **Compare** button.
The summary lists the Requirement ID, Title, Description (if selected), and the class for the following. The output can be limited using the icons at the top of the summary:
- 7 To open a details view of a requirement, double-click the requirement.

The Difference Summary Icons

-  **Requirements contained only in the base container.**
-  **Requirements contained only in the second (compared) container.**

 Changed requirements:

A list of requirements contained in both, but with changes (i.e., same object id, different version).

Click the  next to the Changed total, for change summary.

Click the changed requirement for a detailed view.

 Unchanged requirements:

A list of requirements contained in both, without change (i.e., same object id, same version).

Additional Functions **Direct URL:**

Direct URL include in reports or email to provide access to the comparison. To view this dialog, login will be required.

Using Workflows with Collections or Baselines

Collections and baselines may be configured to use workflows, such that the set of objects may be reviewed and transitioned.

To assign a collection or baseline to a workflow, do the following:

- 1 From **Home**, select **Collection** or **Baseline** Tab.
- 2 Choose the relevant object.
- 3 Click **Edit Properties** in the **Collections** or **Baselines** group of the **Actions** pane.
- 4 From the **Workflow** drop-down, select the desired workflow.
- 5 Click **OK**.

Executing a Transition on a Collection or Baseline**To execute a transition, do the following:**

- 1 From **Home**, select **Collection** or **Baseline** Tab.
- 2 Choose the relevant object from either Tab.
- 3 Open the **Collection** or **Baseline** by double-clicking or highlighting and selecting Open from the **Actions** pane.
- 4 The **Workflow** transition button is displayed on the right side of the Breadcrumb.
The current **Workflow** State and well as the next state are displayed below the **User** menu. if there is no transition displayed, the object has reached its final transition state.
- 5 Click on the transition to execute.
A dialog will be raised should the transition rules require additional information.
- 6 Depending on configuration and content, a progress bar may also be displayed.

Viewing Information about a Collection or Baseline

If a collection or baseline is assigned to a workflow, you can use the same functions as for requirements, e.g. view/modify attributes or see the state change history.

- 1 From Home, select the relevant object from either the **Collections** or **Baselines** Tab.
- 2 Open the **Collection** or **Baseline** by double-clicking or selecting **Open** from the relevant set on the **Actions** pane.
- 3 Once opened, the progress bar at the top right shows:
Workflow progress of objects contained in the collection
Current Workflow State followed by the
Next Transition State
- 4 Clicking in the **Workflow Progress** bar opens the **Edit Attributes** dialog for the container.

This dialog contains all standard, custom and system attributes associated with the collection or baseline.

Moving Collections or Baselines to a Different Category

When you create a collection or baseline, you can assign it to a category. The following procedure describes how to change the category assignment of an existing collection or baseline.

- 1 From **Home**, select the desired tab: **Collections**, or **Baselines**.
- 2 Drag the object and drop it to the desired category in the **Categories** tree.

Copying the URL of a Collection or Baseline to the Clipboard

You can copy the URL of a collection or baseline and paste it into a file for future use and reference. When that URL is later invoked, it will open RM Browser to that collection or baseline.

To copy the URL of a collection or baseline:

- 1 Go to the **Home View**.
- 2 Select either the **Collections** tab or the **Baselines** tab.
- 3 Select the desired collection or baseline.
- 4 Click **Create direct URL** in the associated group of the Actions pane. This opens the **Direct URL** dialog.
- 5 Right-click the URL and select **Copy link address**. This copies the URL to the clipboard.
- 6 Click **Close** to close the dialog.
- 7 Use **Ctrl + V**, or the relevant application-specific menu command, to paste the URL into the file or application where you wish to use it.

Modifying the URL of a Collection or Baseline

After pasting the URL into a file or application, you can also add parameters to it, which allows additional features. If you do not supply runtime parameters in the URL, you can specify them when running the report.

Function	Description	Example URL
Editable Grid	By default, the requirements of collection or baseline are shown in a normal table. To use an editable grid instead, add &editableGrid=true to the URL.	<code>http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=collection&db=ORCL&proj=RMDEMO&collectionId=5&editableGrid=true</code>
Hide Title Bar	By default, the collection or baseline shows a title bar with information about database, instance and path to the report. To hide the title, add &hideTitleBar=true to the URL.	<code>http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=collection&db=ORCL&proj=RMDEMO&collectionId=5&hideTitleBar=true</code>

Chapter 8

Importing Requirements

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Importing Requirements from Microsoft Word Documents

Considerations concerning the import of Microsoft Word Documents

To check which versions of Microsoft Office are supported, please refer to the Platform Matrix at <https://www.microfocus.com/documentation/dimensions-rm/>.

If Microsoft Office is NOT installed on the server:

Importing Microsoft Word documents using the UI is only supported using the Import Mode: *Entire Document (Chapters Only)*. If there are issues, consider RM Import.

Importing Microsoft Excel files must be saved as CSV and imported through the UI (see ["Importing Requirements from a CSV or Excel File" on page 393](#)).

PDF Documents:

PDF documents should only be imported with **Entire Document (Chapters only)** mode.

PDF documents are optimized for printer output. When importing PDF files, attributes may not be recognized properly and thus imported requirements may have unexpected attribute values and, therefore, raise errors in imported requirements.

Choices for Full Document Import

For Document Import:

RM User Interface can be used to:

- Create new requirements
- Create an RM document and populate it with new requirements
- Update or replace existing requirement versions

RM Import and Import Designer

Applications developed to provide a facility for importing requirements previously stored in word documents. Instructions for using RM Import Designer and RM Import can be found in ["Design and Import" on page 456](#).

Formatting Requirements for Import

The rest of this section refers to Browser Import only, for organizations with a backlog of Microsoft Word documents that could be imported into RM you might consider testing import using RM Import.

For import using MS Word Documents, the requirements in your document must be in tables that use the correct layout and formatting in order to be recognized as requirements.

There are several layout options available for import, the following are examples:

- 1 Word Tables imported into a single class:

The simplest approach is to define each row as a requirement, with the attribute display names (as they are defined in the selected class), in the header in bold.

Title	Text	Category	Delivery Phase
EPhoto will be an online photo album	This ePhoto system shall enable the user to browse an on-line photo album.	RMDEMO/Functional/Design	Build1 Build4
Displaying stored photo info	The ePhoto system shall allow users to display any of the information stored with the photo.	RMDEMO/Availability/Cost	TBD Build3

- 2 Specify the class name of each requirement within the table row.

Importing requirements exported and modified for re-import is best accomplished using Excel. However, Excel is notoriously bad for including images within a cell. When exporting requirements containing images intended for modification and re-import, we recommend using Microsoft Word Tables or Roundtrip (see [Importing a Roundtrip Document](#)).

- 3 Create a table for each requirement.

TITLE	Runs on "standard" home PC		
Priority	Paragraph Title	Document ID	
1	Feature 3	Marketing Rqmts	
Category	RMDEMO/Power	Delivery Phase	Build1 TBD
Text			
The ePhoto system shall be accessible to the user from a regular home PC environment running standard Windows software. It is envisaged that this is a software-only application from the user’s perspective.			

Rules for formatting Microsoft Word Tables for RM Browser Import:

Pay attention to **bold/regular** formatting:

Attribute names (*table headings not values*) **must use bold** formatting.

All values (requirement content) **must not use bold** formatting.

Even a single bold formatted blank space in the midst of properly formatted text will cause the text to be treated as an attribute name rather than as an attribute value.

General text formatting (color, underline, italic, etc.) is imported for text attributes and ignored for others. (As noted above, bold must not be used in attribute values.)

Category must match the supported formats (see chapter "[Category Import Formats](#)" on page 389).

The document may contain any number of tables.

Tables may contain any number of rows (requirements) and any number of columns (attributes).

To specify multiple values for a list attribute, separate the values with the pipe (|) character. For example: Build1|Build4

To update/replace an existing RM requirement, include its **Rqmt ID** attribute (PUID).

The **Group** attribute type is not supported for import.

During import, you will be prompted for any mandatory attribute values that are not included in the tables.

Images can be imported into the body of an RM document, but not into requirements.

Formatting an Entire Word Document for Import

If you choose to import an entire Word document:

- Requirement data will be imported from properly formatted tables (as described in ["Formatting Requirements for Import" on page 384](#)).
- Chapters and sub chapters will be created based upon the heading hierarchy of the Word document.

Word Document	RM Document
Heading 1	Chapter
Heading 2	Sub-chapter
Heading 3	Sub-sub-chapter
etc.	

- Images will be imported into body content (not into requirements).
- General text formatting will be imported.

Importing a Word File

The MS Word import of RM Browser has several import modes from which you can choose. The following sections describe these import methods individually.

The following Sections provide access to:

- [Importing a Word Document in Entire Document \(Chapters only\) Mode](#)
- [Importing a Word Document in Entire Document Mode](#)
- [Importing a Word Document in Tables only Mode](#)
- [Importing a Roundtrip Document](#)

Importing a Word Document in Entire Document (Chapters only) Mode

The **Entire Document (Chapters only)** mode will import the document "as is". This mode can be used when importing Word Documents into RM when Microsoft Office is NOT installed on the server.

Tables and text are not parsed as requirements, however if requirement text is formatted in a way that makes the requirement statements easy to select, the **Change Class** action can be used to create requirements from the document text, while leaving document free-form text (e.g., Chapter introductions) in place. The **Change Class** action is described in ["Changing the Class of a Requirement" on page 135](#).

Larger sections of text can be selected and broken up into multiple requirements, for details refer to the section ["Splitting Text Into Requirements" on page 272](#).

To import a Word document:

- 1** In RM Browser, select **Word document** from the **Import** menu.
- 2 Import File:** Click **Browse...** to open a dialog to select the Word file.
- 3** Select the Word file, and then click **Open**.
- 4 Import Mode:** Select **Entire Document (Chapters only)** from the drop-down list.
- 5** Choose whether to **Create**, or **Replace** content from the Word document.
Create will create a new document in Dimensions RM.
Replace will replace an existing document using the new content from the Word document. Select the document you wish to replace in the list of documents.
- 6 Category:** Select the category into which you wish to import the document.
- 7 Document Name:** Specify a name for the RM document that is to be created or revised.
- 8 Document has chapter numbers:** Defines how numbers at the beginning of a chapter title (e.g. "1 Preface", "1.1 Objective") are handled.
Selected: Numbers are removed from the beginning of a chapter title (e.g. "1.1 Objective" becomes "Objective").
Cleared: Chapter titles are not modified.
- 9 Import with Word Processing:** Although 'Chapters Only' has been selected, MS Word Processing will be applied on import.
Selected: Apply Word Processing on Import. This must not be checked if MS Office is NOT installed on the server.
Cleared: Word Processing is not applied on Import.
- 10 Show Preview:** This is only available if **Import with Word Processing is cleared**.
Selected: Raise a dialog displaying an outline of the document sections prior to the actual import. Check boxes to the left of those sections to be included, uncheck those to exclude.
Checking the Title box will select all, you may then deselect sections and their associated subsection as desired.
- 11 Click Import.**
After the import has been completed, the **Import Results** dialog opens. This dialog will display success for document creation, and information the number of chapters created.
- 12 Click Close** to dismiss the results.
- 13 Click Close** on the remaining MS Word Import dialog.

Importing a Word Document in Entire Document Mode

The **Entire Document** mode imports the document with chapters and expects tables to contain requirements only. To import documents with tables that do not contain requirements, either use the **Entire Document (Chapters only)** mode (see chapter

["Importing a Word Document in Entire Document \(Chapters only\) Mode" on page 386](#)) or use RM Import.

To import a Word document:

- 1** In RM Browser, select **Word document** from the **Import** menu. This opens the **Import Word Document** dialog.
- 2 Import File:** Click **Browse...** to open a dialog to select the Word file.
- 3** Select the Word file, and then click **Open**.
- 4 Import Mode:** Select **Entire Document** from the drop-down list.
- 5** Choose whether to **Create**, or **Replace** content from the Word document.

Create will create the document and new requirements in Dimensions RM.

Replace will replace an existing document and create new versions of existing requirements using the new content from the Word document. Only existing requirements that have new values in the Word document will be replaced. Select the document you wish to replace in the list of documents. If you specify a document name that does not exist in Dimensions RM, a new document with the specified name will be created.

- 6 Class Identifier:** Specify the attribute name you used to identify the class. For example, Class Name.
- 7 Category:** Select the category into which you wish to import the document.
- 8 Document Name:** Specify a name for the RM document that is to be created or revised.
- 9 Document has chapter numbers:** Defines how numbers at the beginning of a chapter title (e.g. "1 Preface", "1.1 Objective") are handled.
Selected: Numbers are removed from the beginning of a chapter title (e.g. "1.1 Objective" becomes "Objective").
Cleared: Chapter titles are not modified.
- 10** Click **Import**. After the import has been completed, the **Import Results** dialog opens. This dialog includes information about the requirements that were created and a summary. For further details, see chapter ["The Import Result Dialog" on page 402](#).
- 11** Click **Close** to dismiss the results.
- 12** Click **Close** on the remaining MS Word Import dialog.

Importing a Word Document in Roundtrip Import Mode

The Roundtrip Import mode is used to import a document exported as a **Roundtrip Word Document**. For further information on importing roundtrip documents, see chapter ["Importing a Roundtrip Document" on page 390](#).

Importing a Word Document in Tables only Mode

The **Tables only** mode imports requirements stored in Microsoft Word Tables; any surrounding document text is not imported.

When importing requirements stored in Tables, first ensure that all **mandatory** attributes that have not been defined with default values are included and contain values. If not, add a column with the missing attribute name and fill each cell with values.

To import a Word document:

- 1** In RM Browser, select **Word document** from the **Import** menu. This opens the **Import Word Document** dialog.
- 2 Import File:** Click **Browse...** to open a dialog to select the Word file.
- 3** Select the Word file, and then click **Open**.
- 4 Import Mode:** Select **Tables Only** from the drop-down list.
- 5** Choose whether to **Create**, or **Replace** content selected from tables within the Word document.

Create will create new requirements in Dimensions RM.

Replace will create new versions of existing requirements using the new content from the Word document. Only existing requirements that have new values in the Word document will be replaced.

6 Class Identifier:

Specify the attribute name you used to identify the requirement class to be used for the requirements contained in the table. For example, Class Name. See ["Formatting Requirements for Import" on page 384](#).

7 Click Import.

After the import has been completed, the **Import Results** dialog opens. This dialog includes information about the requirements that were created and a summary. For further details, see chapter ["The Import Result Dialog" on page 402](#).

8 Click Close to dismiss the results.

9 Click Close on the remaining MS Word Import dialog.

Category Import Formats

For Word import, categories can be specified in these formats:

- Full path with forward slash, e.g. RMDemo/Data
 - Full path with backslash, e.g. RMDemo\Data
 - Unique category name, e.g. Data
- Note that there must be no other category or subcategory "Data".

Date Import Formats

Word import requires that the date specified in a Word document matches the format for the attribute of the requirement class you wish to import.

Importing a Roundtrip Document

If you exported a document as a Roundtrip document (see chapter ["Export as a Roundtrip Document" on page 290](#)), you can also import this Roundtrip document on the system that exported it.



NOTE Import Restriction

You can only import the document on a system where the IDs in the document match those of the system.

The Roundtrip import function recognizes the following changes in the document:

- Chapter additions, modifications, deletions, or moves;
- Requirement modifications, deletions, or moves.

To import of a Roundtrip document, do the following:

- 1** In RM Browser, select **Word document** from the **Import** menu. This opens the **Import Word Document** dialog.
- 2 Import File:** Click **Browse...** to open a dialog to select the Word file.
- 3** Select the Word file, and then click **Open**.
- 4 Import Mode:** Select **Roundtrip** from the drop-down list.

NOTE Replace will be selected for Roundtrip, as Roundtrip cannot be used with the **Create** function.

Replace will create new versions of existing requirements using the new content from the Word document. Only existing requirements that have new values in the Word document will be replaced.

Create cannot be used with

- 5 Document has chapter numbers:**

Check if document chapters are numbered.

- 6** Click **Import**.

After the import has been completed, the **Import Results** dialog opens. This dialog includes information about the requirements that were created and a summary. For further details, see chapter ["The Import Result Dialog" on page 402](#).

- 7** Click the **Close** button to dismiss the results.
- 8** Click the **Close** button on the remaining MS Word Import dialog.

Importing Requirements from an XML File

You can easily add, update, or replace large batches of requirements. Save your query results as an XML file, make changes to the requirements with an editor such as Microsoft Word or Notepad, and then import your changes using the XML import feature.

For example:

A requirements manager wants to change the "priority" attribute of 100 requirements from "Must" to "Hope." She opens RM Browser and runs the desired script. She saves the query results as an XML file. In the XML file, she changes the "priority" attribute and saves the updated XML file.

The requirements manager now imports the XML file by completing the **Import XML** dialog box. After the import process completes, an import results page opens that displays the class name, PUID, status, and error details for each requirement.

To import an XML file:

- 1 Select **XML file** from the **Import** menu.

The screenshot shows the 'Import XML' dialog box. It has a blue header bar with the text 'Import XML' and a question mark icon. Below the header, there is a section for 'Import File:' with a file icon and a 'Browse' button. Below that is 'Import Data Into:' with a dropdown menu showing 'Approval'. Then 'Import Mode:' with a dropdown menu showing 'Create'. Below these are four checkboxes: 'Create new requirement if requirement is not found' (unchecked), 'Use default value if no value is specified' (unchecked), 'Truncate if value is too long' (unchecked), and 'Don't propagate suspect links' (checked). At the bottom right are 'Import' and 'Close' buttons.

- 2 In the **Import File** field:

Type the path and file name of the XML file you want to import or click **Browse** to navigate to the file.

- 3 In the **Import Data Into** list:

Select the class into which you are importing the file.

- 4 In the **Import Mode** list, select one of the following options:

Mode	Description
Create	Creates a new requirement if the object node in the XML file does not exist.
Update	Updates the attributes that have changed for each object node in the XML file.
Replace	Creates a new current revision for each object node in the XML file with the changes to the attributes specified in the XML file.

5 **Creating New Requirements:**

If you want to create a new requirement when a requirement in the XML file has an object ID that does not match the object ID of a requirement in the database, select the **Create new requirement if requirement is not found** check box. This option is only available for the **Update** and **Replace** modes.

6 **Import Options:**

Select one or more options as described in the following table:

Option	Description
Use default value if no value is specified	If no value is specified for a mandatory attribute, its default value is used. If the attribute has no default value, an error message is displayed in the import results output page.
Truncate if value is too long	If the value is longer than the maximum value for the attribute, the value is truncated before the requirement is saved.
Don't propagate suspect links	Links are not marked as suspect when the requirement is updated or replaced. NOTE: This option is not available for the Create mode.
Break lock if requirement is already locked	User locks are removed before attempting to update or replace the requirement. Otherwise, a message is displayed in the import results output page. NOTE 1: This option does not remove CM locks. NOTE 2: This option is not available for the Create mode.

Category Import Formats

For XML import, categories can be specified in these formats:

- Full path with forward slash, e.g. RMDemo/Data
 - Full path with backslash, e.g. RMDemo\Data
 - Unique category name, e.g. Data
- Note that there must be no other category or subcategory named "Data".

Date Import Formats

XML import requires that the date specified in a XML file matches the format for the attribute of the requirement class you wish to import.

Importing Requirements from a CSV or Excel File

CSV or Excel import provides a facility for bulk imports of any managed requirement object. Excel also supports the ability to export sets of requirements for review and then to re import modifications.

Using CSV/Excel import, all or selected columns are mapped to attributes allowing new requirements to be created en mass. Changes can also be imported, by mapping a unique identifier (typically requirement ID) from the import to an existing record.

The robustness of this functionality allows users to create, replace, update, delete, undelete, remove, link, or unlink requirements. We generally do not recommend using the Update function, as it captures change without capturing the change history. However, if dozens or even hundreds of requirements have been imported with a errors, you do not need the audit trail. In this case, give the importer permission to update and fix the requirements.



NOTE For file import, the following restrictions apply to Excel (not CSV):

Excel file import is only functional if Microsoft Excel has been installed on the Dimensions RM server. If no Excel on the server, save the Excel file as CSV.

Excel file import only imports the first Worksheet.

Excel imports only one cell per attribute, with CSV multiple values may be imported.

Excel files are converted to CSV format during import. This means: **Text** will be imported as plain text.

NOTE With CSV or Excel Images will not be imported.



NOTE Category Import Formats

For CSV or Excel import, the category attribute can be specified in one of the following formats::

Full path with forward slash, e.g. RMDemo/Data

Full path with backslash, e.g. RMDemo\Data

Unique (no other category with the same name) name, e.g. Data

**NOTE** Added Functions with **Add to Document**

- Specify a Target Category

A new document can be created and, with new requirements, stored in the Category selected. (see [Figure 8-2](#)).

- Add to a Specific Chapter:

When adding to an existing document, the **Chapter** into which the requirements will be added can be included as a column in the import file.

Add Chapter name or number in the column marked: Chapter

Title	Description	Chapter
Visual Instructions	There shall be a visual demonstration	Functional Requirements
Instructions Spoken	There shall be a walkthrough.	Functional Requirements
Demonstration	The app shall rely on image recognition	3.1

**NOTE** Importing Multiple Values with CSV

For CSV import: multiple values for a list attribute may be imported. The values must be separated using the pipe (|) character. For example: Windows|Linux

To Import Requirement Data from a CSV or Excel File:

- 1 To open the **Excel / CSV** Import dialog:

Select **Excel / CSV File** from the **Import menu**.

- 2 **Import File:**

Select the CSV or Excel file to be imported.

- 3 **File Encoding:**

Select the encoding used for the file. If the desired encoding is not available, convert the file to a supported format.

Excel / CSV Import

Import File:

Browse

File Encoding:

UTF-8

Import Mode:

Create

Field Separator:

Comma

Rows To Be Imported:

All

From

To:

Log Level:

Terse

Header Row:

☒ File has header row

Text Content:

☐ Contains HTML

Container Option:

☐ None
☐ Add to Document
☒ Add to Collection

Select a collection...

Class:

Business_Requirement

Stored Mappings:

BR TDR

Attribute Mapping:

File Column List:

Field 001 (Title) [selected]
Field 002 (Description) [select
Field 003 (Priority-word) [sele
Field 004 (Label)
Field 005 (Analyst) [selected]
Field 006 (Priority - ALM)

RM Attributes:

<Collection>
<Comment Text>
Analyst [selected]
Attachment
Category
Description [selected]
Owner
Priority [selected]
Product Manager
Status Log
Title [selected]

Mapped Attributes:

Field 001 (Title) -- Title
Field 002 (Description) -- Description
Field 005 (Analyst) -- Analyst
Field 003 (Priority-word) -- Priority

Import

Close

Figure 8-1. Import with Create, all rows, and stored mapping.

4 Import Mode:

From the **Import Mode** list, choose one of the following import options, check guidelines for requirement attributes.

Import Mode	Mapping Guidelines
Create	You must map columns from the CSV or Excel file to requirements attributes in RM. Data from the columns you select will be imported to the attributes you map the columns to, in the new requirements. First select the requirements class from the RM Class field. Then, select the column from the File Column List field and the corresponding attribute from the RM Attribute list. Click the right arrow button to add the mapped pair to the list of Mapped Attributes.

Import Mode	Mapping Guidelines
Update	Update presents two mapping sections. The first defines the criteria necessary to locate the requirements to be modified. The attribute used to locate the requirement to be modified must be a unique identifier, the Requirement ID (PUID) is generally used. The second section provides the facility to Select the column from the File Column List field and the corresponding attribute from the RM Attribute List field, before clicking the right arrow button to add the mapped pair to the Mapped List field. You can optionally choose to include only rows from the input file that do uniquely match only one object in Dimensions RM. This is accomplished by checking the Ignore rows matching multiple objects option. For example, if using an internal requirement identifier or a title, if the identifier appears multiple times it might be best to reconsider those changes. It is also possible to create new requirements if no requirement matching the criteria specified is found.
Replace	Refer to the information above on Update.
Delete	Only the unique identifier is required to mark one or more requirements as deleted using this import facility. You can optionally choose to include only rows from the input file that uniquely match only one object in Dimensions RM. This is accomplished by checking the Ignore rows matching multiple objects option.
Undelete	In situations where a group of requirements has been, perhaps mistakenly, marked as deleted, they can be 'Undeleted' using this import mode.
Remove	Only the unique identifier is required to remove (as in erase) one or more requirements versions from the database. Only the Current version is removed; the previous Replaced version becomes current.

Import Mode	Mapping Guidelines
Link	The import file must contain unique criteria, typically Rqmt ID, to locate both the primary and secondary requirements in order to create the relationship. Choose the relationship from the Relationship list. This relationship is used to identify relevant attributes in the primary and secondary objects identified. Select the value(s) from the import file that will be used to identify the primary requirement, select the value from the primary class and then click the right arrow button to add the mapped pair to the Mapped List field. For example, Rqmt. Id to Rqmt. ID. Select the value(s) from the import file that will be used to identify the secondary requirement, select the value from the secondary class and then click the right arrow button to add the mapped pair to the Mapped List field. For example, Rqmt. Id to Rqmt. ID. Select the Ignore rows matching multiple objects option to include only those rows in the import file that uniquely match one object in Dimensions RM. NOTE TEXT type attributes are not valid for Link pairing so they will not be included in the attribute list when in Link mode.
Delete Link	Refer to the instructions above for Link. Marks link as deleted.
Remove Link	Refer to the instructions above for Link. Permanently removes a link.

Table 8-1. Required Content Based on Import Mode**5 Field Separator:**

Choose from the list: **Comma**, **Semicolon**, **Space**, or **Tab**, depending on the separator is used in the CSV or Excel file.

6 Rows To Be Imported:

To limit the range of rows to import, deselect **All** select **From** and **To** in order to select a range.

Leaving **All** selected will import data from all rows in the file. If the file has a header row, this is omitted by selecting the **Header Row** option.

*If you are not sure you have the data defined correctly select a range of just 2 or 3 rows to run a quick test. If there are failures, the **Import Result** dialog will list details.*

7 Header Row:

Select if the File has a header row. If selected, the column names will be displayed in the **File Column List**.

8 Container Option:

To import all requirements into an existing document or collection, do the following:

- Select **Add to Document** or **Add to Collection to raise Select** dialog
 - Select a document or collection from the list, or
 - Use the **category drop-down** to modify the Container search.
 - Use **New** Document or Collection to create a new container.

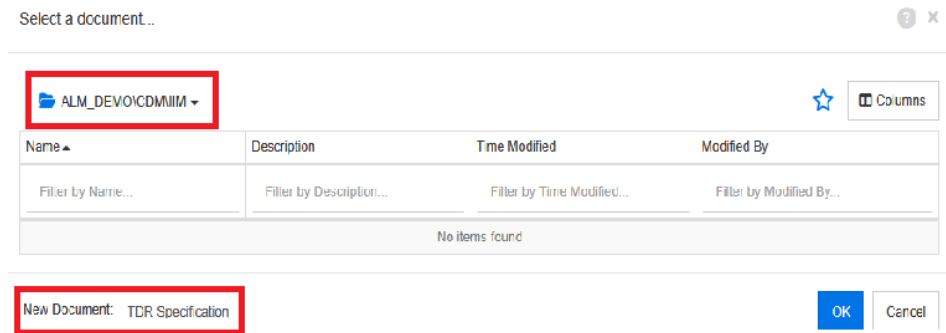


Figure 8-2. New Document and Requirements Saved in Selected Category

9 Class:

Select the targeted class from the drop-down

10 Stored Mappings:

Once the Mappings between the Import file and the Attributes have been completed, the selected settings can be stored for a re-run of the same import format.

11 Attribute Mapping:

For create, the intent is to pair the columns intended for import in the File Column List with the RM Attributes. Clicking **Import** will create new requirements based on the data, assuming it adheres to mandatory attributes and content type.

For all other Import Modes:

!! Mapping to be used to locate objects:

Use this section to find/identify the requirement object to be updated. Map the entry in the **File Column List** (a **unique identifier**) with an entry from the RM Attributes list (e.g., Requirement ID).

Refer to [Table 8-1](#) for input necessary for each Import Mode.

**NOTE** Automatic Mapping

If the column headings from the File Column List match the entries in the RM Attributes column they can be mapped automatically by clicking  the "magic wand".

- From the **File Column List**, highlight a column to be included.
- From the **RM Attributes** column, highlight the attribute to be populated with its contents
- Click  to move both to the Mapped Attributes column.

12 Select Import.**13 Import Results Dialog:**

This dialog lists successes and failures for each line of the import file.

14 You may now **Close** the dialog.

Importing Test Cases with Test Steps

Test Cases, with or without associated Test Steps (as defined in ["Creating Test Cases and Steps" on page 412](#)) can be imported using Excel or CSV. Imports can be used to create Test Cases and Steps or to modify existing objects.

The following describes the columns mandatory or optional to a correct import when Test Management has been defined using the classes provided.

Excel/CSV Test Case with Test Steps Import		
Column Row 1	Header Label	Description
A	Test ID	• Initial Import: When creating new test cases, the first column of the initial line of input must be uniquely identified. We recommend using something like TC_1, TC_2, etc. • Replacing Existing Data: The initial column should hold the Requirement ID (PUID), as is usual with updates of any class.
B	Test Name	The name assigned to the Test Case.
C Optional	Test Design Status	This attribute is defined as part of the Test Case definition, although optional it is useful to maintain the status of each test case, whether in Design, Ready, in Repair or Deprecated.
D	Description	The Test Case Description

Excel/CSV Test Case with Test Steps Import		
Column Row 1	Header Label	Description
E Optional	Estimated Run Time	The time expected to run the Test Case. This estimate is used in reporting along with the actual run time.
F Optional	Priority	The Test Case Priority. The settings: 1 - Low, 2 - Medium, 3 - High, may be modified.
G	Test Steps - Step	This column numbers the Steps to be defined within the Test Case, the initial step should be: Step 1
H	Test Steps - Description	The description of the initial Test Step, for example: "Press button "Assign Change Items".
I	Test Steps - Expected Result	The result expected after execution: "An overlay window opens and a list of Change Items is displayed".
Column Row 2-n	For each additional Step, Columns A - F are empty, see Figure 8-3	
G	Test Steps - Step	This column numbers the Steps to be defined within the Test Case, the second step should be: Step 2
H	Test Steps - Description	The description of Step 2, for example: "Select one of the displayed Change Items".
I	Test Steps - Expected Result	The result expected after execution: "An overlay window opens and a list of Change Items is displayed".

For ease of import, we recommend using the column headings consistent with the attribute names, if you do then the columns are mapped automatically by clicking the "magic wand" in Attribute Mapping. 

	A	B	C	D	E	F	G	H	I
1	Test ID	Test Name	Test	Description	Esti	Pri	Test Steps - Step	Test Steps - Description	Test Steps - Expected Result
2	TC_1	Assign Change Item	Ready	Assign Change Items from a	10	3 - Hig	Step 1	Select Release Tab and open a Release from the displayed list in	The Release attributes are displayed. An action "Assign
3							Step 2	Press button "Assign Change Items"	An overlay window opens and a list of Change Items is displayed
4							Step 3	Select one of the displayed Change Items and assign it to the release	Change Items is assigned
5							Step 4	Select a different Release and assign the same Change Item	Change Item is assigned
6							Step 5	Press button "Save"	Window is closed
7							Step 6	Open the Release again	In the tab "Assigned Change Items" the new assigned CI is
8	TC_2	Unassign Change Item	Ready	Remove Change Items	10	3 - Hig	Step 1	Select Release Tab and open a Release from the displayed list in	The Release attributes are displayed. An action "Assign
9							Step 2	Press button "Assign Change Items"	An overlay window opens and a list of Change Items is displayed
10							Step 3	Select one of the displayed Change Items which is assigned to the release and unassign it	Change Items is no more assigned
11							Step 4	Press button "Save"	Window is closed
12							Step 5	Open the Release again	In the tab "Assigned Change Items" the CI is no more listed
13	TC_3	Replacement for Tasks	Ready	Assign Task to different user	15	2 - Me	Step 1	Login with role SPL	Login successful Tab Administration available

Figure 8-3. Sample Test Case with Test Steps Import

Importing Requirements Exported from RM

Exported data can be import as Word Documents, XML Files, Excel or CSV.

When importing user attributes, the setting must be **Show User ID**. For further information see chapter ["Display Settings for User Attributes" on page 75](#)

For importing previously exported requirements, there are two options:

- 1 Importing a document created by the **Export** function of Quick Search
- 2 Importing a Word document created by **Export** function of a RM document.

The same rules apply as those listed in ["Importing Requirements from Microsoft Word Documents" on page 384](#).

Roundtrip may be used to import a modified exported see ["Importing a Roundtrip Document" on page 390](#).

- a Ensure that the attribute names of the class match the column headers of the document
- b Remove all fields which cannot be filled (e.g. creation date). Remove the ID column only when creating new requirements.
- c Remove the **Row Count** row.

- 3 For XML files:

- a Remove all fields which cannot be filled (e.g. creation date). Remove the ID column only when creating new requirements.
- b Remove requirement attributes **id**, **version** and and the **attribute** element with the **id** value **PUID**.

- c Import as discussed in ["Importing Requirements from an XML File" on page 391](#)
- 4 For CSV or Excel files:
 - a Remove the **Row Count** row.
 - b Save the file.
 - c Import as discussed in ["Importing Requirements from a CSV or Excel File" on page 393](#)

The Import Result Dialog

After importing requirements or a document (which can also contain requirements), the **Import Result** dialog is shown. This dialog shows the import details (e.g. import mode) and the import status for each requirement by providing these sections:

- Success
- No changes
- Warnings
- Errors



CAUTION!

A requirement can be imported successfully, but may still be listed in the Warnings section. The reason for the warning may be the attempt to set an attribute which cannot be set by the importer (e.g. Suspect, or modified time).

The **Success** section allows you to open imported requirements by clicking their respective links in the **Object** column.

Importing Requirements from a ReqIF File

Requirement Interchange Format (ReqIF) is a standardized XML file format used to exchange requirements between applications supported by the same or different vendors.

A ReqIF file contains:

Data model

- User defined types
- User defined attributes
- User defined requirement types

Requirements

Links between requirements

The following Sections describe how to import requirements and documents from a ReqIF file into a Dimensions RM Instance.

ReqIF Import from the Command Line:

Dimensions RM also supports the execution of ReqIF imports from the command line. Release specific instructions, i.e., readme, can be found under

```
C:\Program Files\Open Text\Dimensions 25.2\Common Tools  
2.5.0.0\tomcat\10.1\webapps\rtmBrowser\WEB-INF\classes\ReqIF  
CmdLine
```

ReqIF Export Prerequisites

The following prerequisites apply to ReqIF files exported by any solution, including other instances or installations of Dimensions RM:

- 1 Export your module or modules into a single ReqIF file.

For specific information concerning the data included in the ReqIF export see the manual of the application providing the data.
- 2 If your ReqIF module contains pictures or other attachments, they must be present in the same directory as the ReqIF file (DOORS will export images and attachments in this manner).
- 3 The complete contents of the ReqIF export directory must be included in a single ZIP file which can be imported by RM Browser.

ReqIF Import Prerequisites

The first entry in this list is Critical the rest are important.

- 1 The RM Class(es) into which the requirements are to be imported **MUST** contain the following attributes (see ["Attribute Definition" on page 533](#) for assistance):

External ID (Type: Alphanumeric)

ReqIF ID (Type: Alphanumeric)

ReqIF Owner (Type: Alphanumeric)

File attachment (Type: File Attachment)

If the **Display Name** of each of these attribute types are defined as listed above, they will be mapped automatically.

To support the **Baseline** option, the following attribute must also be defined:

ID Backup (Type: Alphanumeric)

- 2 Although it is possible to set defaults during import, it is simpler to establish defaults, in advance, for mandatory values:

If alphanumeric or text, set a default value.

If a list attribute choose a default selection.

- 3 Decide whether to import all into a single class or assign them to separate RM Classes.

It is possible to import all identified types into a single class, to review the data following a successful import and to use the **Change Class** Action should you need to reassign requirement types later.

However, if collaboration is your goal, i.e., to import a document and to use ReqIF to import changes as they are delivered, we recommend mapping all important requirement types contained in the import to RM Classes.

4 The ReqIF data is always imported into a **Document (Import Document)**:

The ReqIF Import Document may be based on an existing Document (template). The **Import Document** settings, except the description, will be inherited from the template. If the chapters for *Glossary* and *Table of Figures* chapters have been created in the template, they will be created in Import Document.

A **Target Document** can be chosen. This is an existing document into which the imported requirements will be added. A **Snapshot** of the document is created prior to the import. Check the **Import Baseline** box, in order to select a Target Document.

For Import detail see:

[ReqIF Import Dialog - Setup](#),

[ReqIF Import Dialog - Mapping](#).

ReqIF Import Dialog - Setup

If you have not already done so, please review ["Importing Requirements Exported from RM" on page 401](#).

A Note for New RM Users: In RM, an object-based requirements management solution, a [Snapshot](#) is a frozen copy of a document, while a [Baseline](#) is a frozen set of requirements contained within it.

- 1** From the **Import** menu, select Reqif. The **Import ReqIF** dialog opens.
- 2** Click **Browse** and select the ZIP file that contains your ReqIF file.
- 3** If the ZIP file contains more than one ReqIF file, the **Choose ReqIF File** dialog opens. Select the ReqIF file you wish to import and click **OK**.

4 **Choose a Document Template or Import Into an Existing document:**

Template Document: Select from the drop-down list the name of the template to be used to structure the imported requirements as they are imported into a new document.

Target Document: Check the **Import Baseline** box, in order to select an **existing document** into which the requirements will be imported - after a baseline is created.

Check the box to indicate that the requirements contained in the existing document were imported using ReqIF.

5 **Category:** The category into which the document and its content will be placed.

When Import Baseline is checked, the import target is selected, the category cannot be modified.

6 **Table As:** If your import module contains DOORS tables, they can be imported either as HTML tables or as single requirements.

HTML: Creates an HTML table and saves in a text attribute. The conversion to HTML will drop any attributes which are not visible. To keep all attributes choose **Requirement**.

Requirement: Saves every cell of your table as single requirement.

- 7 Module Structure:** A document (module) may be imported with or without chapters.

Chapters: The resulting RM document will contain chapters which contain either sub-chapters or requirements.

Requirements Only: The resulting RM document will contain only requirements.

- 8 Import Mode:** Specifies how import should operate on incoming requirements if the Baseline Box was checked:

Create Requirements: Always creates the requirement during import.

Replace Requirements: Replaces existing requirements during import.

Create new requirement if requirement is not found: This option is only available if **Replace Requirements** has been selected.

Box Checked: A requirement is created if a match cannot be found.

Box Unchecked: New Requirements will not be created.

- 9 Titles:** Create New Titles if empty

When importing requirements from a solution that does not require titles an RM AI Action is available to generate titles on import, see [Generating Requirement Titles](#).

Box Checked: A title is created for all requirements missing titles.

Box Unchecked: Titles will not be created.

It is possible to generate titles after the requirements have been imported

10 ReqIF Documents / Selected Documents:

Here, you can define which documents (modules) you want to import.

Adding a document (module) for Import:

- a** Select the documents (modules) you want to import in the list **ReqIF Documents**.
- b** Click  . This adds the document to the list **Selected Documents**.

Renaming a Selected Document:

- a** Highlight the documents (modules) you want to import in the list **Selected Documents**.
- b** Click on the **Rename** link, below the Selected Document list. This opens the *Rename document* dialog.
- c** Enter the new name into the text box.
- d** Click on the **OK** button.

To Remove a document (module) from the Import:

- a** Select the documents (modules) you want to remove in the list **Selected Documents**.
- b** Click  .

- 11** Click **Next**. This opens the Import ReqIF dialog for mapping. From here requirement types are identified and the ReqIF attributes mapped to RM attributes. The initial steps require that you select the class or classes into which the requirements will be imported.

ReqIF Import Dialog - Mapping



IMPORTANT!

In Single Class Mode, the following steps must be completed once.

In Multi-class Mode these steps must be complete for each class selected. The **Import tab will not respond until all classes have been mapped.**

If you have defined, as instructed in [ReqIF Import Prerequisites](#), the attributes ReqIF ID, **External ID**, and **ReqIF Owner will be populated automatically.**

If the attributes have not been defined, please close this dialog and define them.

12 RM Class: list the class(es) used when importing.

Single Class Mode:

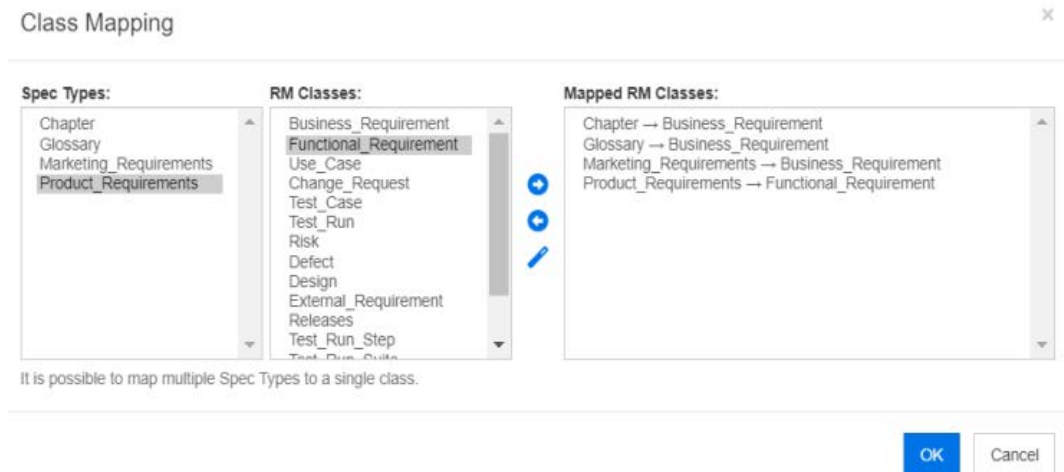
On import, the single class mode converts every requirement object in your ReqIF file into the same RM class type. To use the single class mode, click into the list box to select the RM Class.

Multi Class Mode:

On import, the multi class mode converts each requirement object in your ReqIF file for which a class mapping has been defined into the corresponding RM class type.

To use the multi class mode, execute these steps:

- a Check the box to the left of **Multi Class**, to set the multi-class option.
- b Click **Class Mapping**.
- c Select a class from the Spec Types (import) list and then select its corresponding class from the **RM Classes** list. In the example below, the data defined in Spec Type Product_Requirements are imported into RM as Functional_Requirements. Glossary entries can be moved into any class, and then reviewed, modified or the class changed to Glossary.



- d Click .
- e Repeat steps c and d for all other classes to be mapped for import.

f Click **OK**.

13 Attribute Mapping:

Attribute mapping associates each ReqIF attribute with the Dimensions RM attribute that will receive its value.

Mappings can be stored. If you have previously stored a mapping for the selected class, it can be selected from the **Stored Mappings** list.

Most attribute types including Group, File attachments, URL and Lookup attributes are supported.

You may Click **+** to automatically create and map unmapped attributes. This can be useful as a one-time import of requirements, assuming the user has permission to create attributes. However, if importing a document that is intended to be baselined and then updated, best practice is to define attribute targets and to save the mappings for reuse.

To establish mappings:

- a Highlight each **ReqIF Attribute** to be imported from column 1.
- b Highlight its **RM Attribute** target from column 2.
- c Click **+** to assign both to the **Mapped Attributes** list.

- 14 If **Import Baseline** was checked: Select the **REQIF_ID** from the ReqIF Attributes list, select **ID Backup** from the **RM Attribute** list.

Click **+** to move the **REQIF_ID** and the **ID Backup** to the Mapped Attributes.

Removing an Attribute Mapping:

- a Select the attribute you want to remove in the **Mapped Attributes** list.
- b Click **-**.

- 15 **Set Default Values:** Values may be set for text or alphanumeric attributes for which data is not provided.

You must assign default values to Mandatory Attributes, or use **Map Values** to attributes in Dimensions RM.

- 16 RM Attribute Value Mapping:** A value mapping defines how to convert a value of multi-value attribute (e.g. list attribute).

Mapping a Value:

- a Select a ReqIF value in the **ReqIF Values** list.
- b Select an RM value in the **RM Values** list.
- c Click  . The mapping appears in the **Mapped Values** list. Repeat these steps for further values you want to map.

Removing a Value Mapping:

- a Select the value you want to remove in the **Mapped Values** list.
- b Click 

- 17 Save your mappings:** The next import that uses the mapping between ReqIF Type and the RM Class can be retrieved by assigning a name to these mappings:

- a Click  next to the **Store Mappings** list.
- b Enter a name into the **Name** box.
- c Click **OK**.

- 18** In Multi Class mode, repeat step steps [Step 13](#) through [Step 17](#) for each class. The import cannot continue until every selected class has been mapped.

- 19** Select the ReqIF attribute that identifies chapters from the **Chapter Identification** list.

- 20** Type the text that identifies a chapter in the **Attribute Value** box; if there is no special chapter marker, it may be left blank.

- 21** Click **Import** to start the import.

- 22** If there are **mandatory** attributes the system will raise a final warning, as the import will fail if there are no defaults assigned. Click **OK**.

During execution a message is raised indicating progress as to migration of data, followed by the migration of links.

Upon completion, the **Import was Finished** is raised followed by a detail report including:

- Import Template
- Target Document
- ReqIF Type to RM Class Mappings
- Requirements identified and imported
- Requirements failing the import

This report can be **saved** as: ReqIF Import.html.

Chapter 9

Test Management

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Working with Test Management

Test Case Management provides a facility for users to create a set of actions performed on a system to ensure that it meets the requirements defined. Maintaining test cases within the Requirements Management solution enables an analyst to create the test case as well

The act of defining test cases as part of the requirement definition allows the analyst to consider one of the critical rules for requirement acceptance: *is it testable?* This also provides a clearer understanding of the requirement, which helps to ensure that, when developed, it will meet the need established in the requirement statement.

The QA team may revise the test case, break it down into smaller test steps but the initial test case should be elicited directly from the requirement.

Getting Started:

Before the organization can begin to use the Test Management, it must be configured as part of the Schema. This task must be performed by the Instance Administrator, following the instructions in the ["Configuring Test Management" on page 420](#).

The following are the classes designed to support Test Management:

Test Case defines the goal, i.e., the specific feature to be verified. The test case includes the prerequisites, and associated data to assist the tester with the verification.

Test Steps sit within the Test Case holding each action and its expected results. Throughout this discussion references to the Test Case includes both the case itself and the actions necessary for verification.

Test Runs keep track of which test cases have been tested, when they were tested, by whom and the status for each step.

Test Suites provides a facility for collecting and tracking related groups of test cases, for example, all test cases associated with a specific component. The Test Suite allows the team to step through a series of cases, and then return to retest all or those that failed the first time.

Test View manages all aspects of the test related classes, including creation, modification, execution and status.

Working with Test Management includes:

["The View from the Test View" on page 411](#)

["Creating Test Cases and Steps" on page 412](#)

["Create and Populate a Test Suite" on page 415](#)

["Assigning Cases to a Test Suite" on page 415](#)

["Test Suite Execution and Reporting" on page 417](#)

["Exporting Test Suite Details:" on page 417](#)

["Creating a Test Run" on page 419](#) - should you choose to run test cases individually, rather than as part of a Test Suite.

The View from the Test View

The Test View, like the Home and Quick Search Views opens dialogs for listing, executing, and reporting on the various aspects of Test Management. From the Test View, the Test Cases and Test Runs are listed with an overview of Execution Status. Related Test Cases may be assigned to Suites for execution.



NOTE Working in Test View

Although Test Cases and Test Steps may be created as you would any objects in Dimensions RM, if the team is adopting the full implementation of Test Management, it is recommended that users work within the **Test View**. This simplifies creation, linking and reporting of elements

The Test Management dialogs ensure that testers are able to track the actual outcome and status of each executed test step, including who ran the test, when it was run, and how long it took to execute.

Run Name	Description	Execution Status	Estimated ...	Responsible Tester
Two Dollar US Currency Note	The scan of a two (2) dollar US Currency note shall cause the phone to speak.	Passed	3	Ryan Forbes
Five Dollar US Currency Note	The scan of a five (5) dollar US Currency note shall cause the phone to speak.	Passed	3	Martin Henke
Ten Dollar US Currency Note	The scan of a ten (10) dollar US Currency note shall cause the phone to speak.	Passed	3	Julia Schoeller
Twenty Dollar US Currency Note	The scan of a twenty (20) dollar US Currency note shall cause the phone to speak.	Not Executed	3	Joanna Miller
Fifty Dollar US Currency Note	The scan of a Fifty (50) dollar US Currency note shall cause the phone to speak.	Not Executed	3	Joanna Miller
One Hundred Dollar US Currency Note	The scan of a one hundred (100) dollar US Currency note shall cause the phone to speak.	Not Executed	3	Joanna Miller
Silent Mode On Vibrate on	The phone will emit the number of pulses consistent with the value of the note.	Passed	5	Julia Schoeller
One Dollar US Currency Note	The scan of a one (1) dollar US Currency note shall display \$1.00 Front or \$1.00 Back.	Passed	5	Joanna Miller
Two Dollar US Currency Note	The scan of a two (2) dollar US Currency note shall cause the phone to speak.	Failed	5	Joanna Miller
Five Dollar US Currency Note	The scan of a five (5) dollar US Currency note shall cause the phone to speak.	In Progress	5	Joanna Miller
Ten Dollar US Currency Note	The scan of a ten (10) dollar US Currency note shall cause the phone to speak.	Not Executed	5	Joanna Miller

Figure 9-1. From Test Cases and Test Runs tabs view Execution Status

The tabs available from the **Test View** include listings of: **Test Cases**, **Test Suites**, **Test Runs**, with additional tabs raised for recently open or executed objects.

The Execution Status Overview reports Status Box for all cases included in the selected categories.

Test View Filtering

- **Test Runs Tab:** Each status is a toggle, click on a status to exclude it from the display.
- **Additional Filter Options**  From Test Cases, Suites or Runs
 - Category:** Restrict the display to a single selected category.
 - Selected Baseline(s):** Restrict the display to the contents of a Baseline.
If one or more baselines are selected, the Category filter is cleared.
 - List Attribute:** Depending on class and content:

Assigned to: Select the Tester assigned to the Suite

Latest Run: After multiple test runs, limit the display.

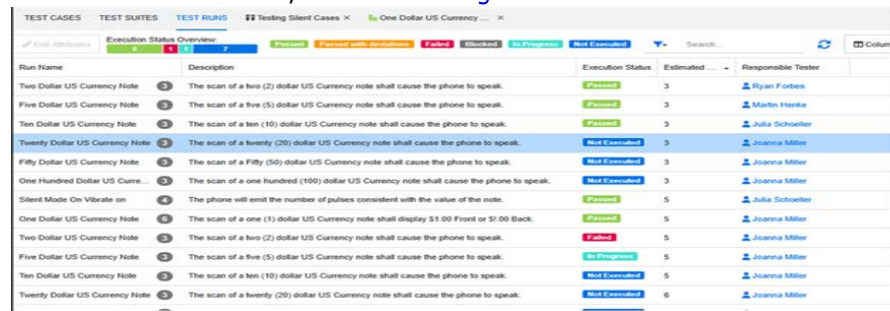
Advanced Filter: Click the pencil icon  to open the Filter Dialog. Limit the list displayed as you would from Quick Search or Home View. For details, see [Quick Search Filtering](#).

Creating Test Cases and Steps

Before breaking each test case into the steps you might want to consider including Test Parameters, see that will each test case into the series of steps that will drive the test runs, the steps to be performed, the input data to be used, and the anticipated result, ensuring the software behaves correctly.

The Test Case:

- 1 From Main Menu, select **Test**, which will bring you to Test Management
- 2 Select the **Test Cases** tab, as shown in [Figure 9-2](#).



Run Name	Description	Execution Status	Estimated	Responsible Tester
Two Dollar US Currency Note	The scan of a two (2) dollar US Currency note shall cause the phone to speak.	Completed	3	Ryan Forbes
Five Dollar US Currency Note	The scan of a five (5) dollar US Currency note shall cause the phone to speak.	Completed	3	Martin Henke
Ten Dollar US Currency Note	The scan of a ten (10) dollar US Currency note shall cause the phone to speak.	Completed	3	Julia Schoeller
Twenty Dollar US Currency Note	The scan of a twenty (20) dollar US Currency note shall cause the phone to speak.	Not Executed	3	Joanna Miller
Fifty Dollar US Currency Note	The scan of a Fifty (50) dollar US Currency note shall cause the phone to speak.	Not Executed	3	Joanna Miller
One Hundred Dollar US Currency Note	The scan of a one hundred (100) dollar US Currency note shall cause the phone to speak.	Not Executed	3	Joanna Miller
Silent Mode On/Vibrate on	The phone will emit the number of pulses consistent with the value of the note.	Completed	5	Julia Schoeller
One Dollar US Currency Note	The scan of a one (1) dollar US Currency note shall display \$1.00 Front or \$1.00 Back.	Completed	5	Joanna Miller
Two Dollar US Currency Note	The scan of a two (2) dollar US Currency note shall cause the phone to speak.	Failed	5	Joanna Miller
Five Dollar US Currency Note	The scan of a five (5) dollar US Currency note shall cause the phone to speak.	In Progress	5	Joanna Miller
Ten Dollar US Currency Note	The scan of a ten (10) dollar US Currency note shall cause the phone to speak.	Not Executed	5	Joanna Miller
Twenty Dollar US Currency Note	The scan of a twenty (20) dollar US Currency note shall cause the phone to speak.	Not Executed	6	Joanna Miller

Figure 9-2. Select Test from the Menu Bar to Manage Test Cases, Suites and Runs

- 3 Click on '+ New' to open the Test Case dialog.

- 4 **Standard Attributes** section:

Title: Test Case Creation

Description: Verification of Test Case Creation

- 5 Expand the **Custom Attributes** section of the form.

Your Test Team may have assigned a different name to this section and may have included additional or different items. The following are typical Test Case attributes:

Prerequisites:

Describe the functionality necessary to execute the test. For example, you must have Dimensions RM 25.4 (13.1) installed

Priority: Enter the Priority

Estimated Run time: Estimate the time expected to run the Test Case, e.g. 5 (this estimate is used in reporting along with the actual run time)

- 6 Click **Save**

As with all object creation, it is possible to save and copy when creating objects containing similar attributes).

7 Select the **Test Steps** tab at the top of the Test Case

Once the Test Case has been saved, the Test Steps section of the dialog may be expanded. It is not possible to create and link the Test Steps until the Test Case is Saved.

The Test Steps

*Each Test Step is linked to the **Test Case** in which it was created and represents a single action in its execution.*

If you closed the Test Case, click on the Test Case tab or refresh the list, select and double-click to open it again.

Click on the Test Steps tab at the top of the Test Case or Scroll down to expand the **Test Steps** Section.

8 Click the **+** to add a numbered step.

9 **Step Name:** Enter the Step Name, for example: "**Enter the Test View**"

10 **Action Description**

Describe the action to be completed, for example: "From the Menu Bar, click on **Test**"

11 **Expected Result**

Enter the Expected Result, for example "The Test View, as shown in [Figure 9-2](#), is accessed"

Attachments can be included to ensure the view for the tester is as expected..

12 You may **save** and continue with the next step, or simply continue.

Repeating steps 8-12 until all actions have been added to the Test Case.

13 **Save and Close** the **Test Case**.

The Test Step section header offers the following selections:

	Add: Adds a new Test Step
	Copy Step: Create a copy of the highlighted Test Step
	Copy to Test Case: Copy the highlighted Test Step(s) to another Test Case for reuse. This icon will raise a dialog prompting the user to choose the target case. Please note that it is also possible to copy a Test Case, including links (e.g., the test steps), as well as the Collections or Documents in which it is contained, see " Copying Requirements " on page 131.
	Remove Step: Removes the highlighted step.
	Move Down: Move the highlighted Test Step down in the execution order
	Move Up: Move the highlighted Test Step up

	Link Existing: Opens the Link Requirements dialog to allow users to link the Test Step to another requirement. Users may link the Test Step to, for example, a Functional requirement or a Defect. It is not recommended that a single test step be linked to more than one test case as the tracking will not be accurate - the default process forbids it.
	Select Attributes to Display: Opens User Settings-->Test Steps to Add or Remove attributes from the Test Steps listed.

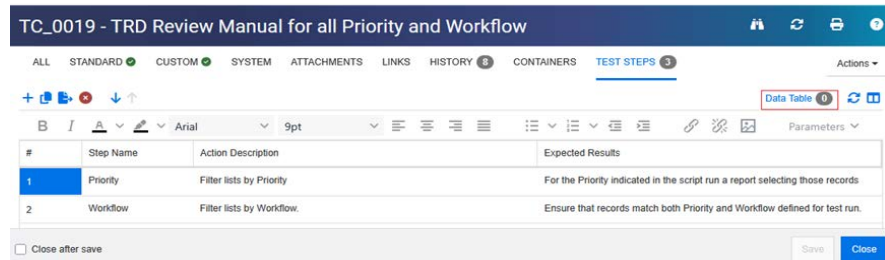
Parameterized Testing

Parameters increase the flexibility of tests by enabling users to execute the same test, repeatedly, with different data sets each time.

In the following example, test steps are created using parameters representing: **Priority** and **Workflow**.

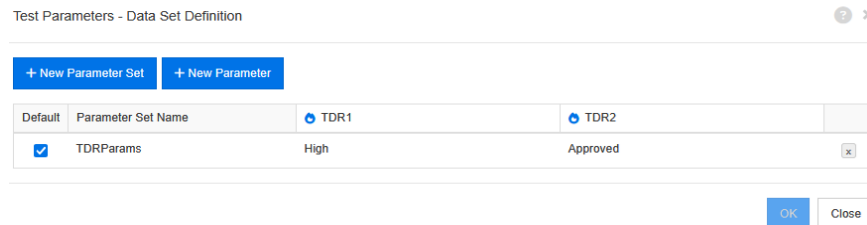
Test Parameters - Test Case Steps

- 1 Create a new or open an existing Test Case.
- 2 Click Data Table to define parameters. used to create Test Run.



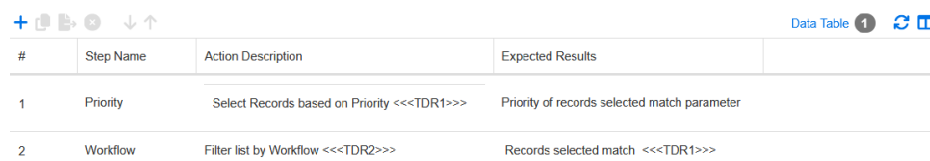
#	Step Name	Action Description	Expected Results
1	Priority	Filter lists by Priority	For the Priority indicated in the script run a report selecting those records
2	Workflow	Filter lists by Workflow.	Ensure that records match both Priority and Workflow defined for test run.

- 3 Click New Parameter Set, to assign a Parameter Set Name and description.
- 4 Click New Parameter, to define each new parameter. We are defining TDR1 for Priority and TDR2 for Workflow in this parameter set.



Default	Parameter Set Name	TDR1	TDR2
☒	TDRParams	High	Approved

- 5 Build the Parameters into the test steps using <<<TDR1>>> and <<<TDR2>>>. Once built in, the parameters change, but the test steps remain the same.



#	Step Name	Action Description	Expected Results
1	Priority	Select Records based on Priority <<<TDR1>>>	Priority of records selected match parameter
2	Workflow	Filter list by Workflow <<<TDR2>>>	Records selected match <<<TDR1>>>

- 6 Run the tests with Priority = High and Workflow = Approved.

In Progress		TRD Review Proc...			2	2		Columns
Description: Process test based on Priority and Workflow State		Prerequisites: (None)						
#	Step Name	Action Description	Expected Results	Execution Status				
1	Priority	Select Records based on Priority High	Priority of records selecte...	Passed				
2	Workflow	Filter list by Workflow Approved	Records selected match ...	Passed				

Create and Populate a Test Suite

The Test Suite provides a facility for grouping sets of related test cases and testing each in the assigned sequence. Testers may begin by testing all cases in the suite, or only those with a particular **Execution Status**.

1 Select the **Test Suite** tab in the **Test** View.

2 Click on **' + New'** to open the **Test Suite** dialog.

3 **Test Suite Name:**

Assign a name to the Test Suite.

4 **Description:**

Describe the Suite, and the range of cases to be tested. For example, A collection of all cases associated with Test Management functions.

5 **Responsible Tester**

Assign the tester responsible for the oversight of the suite.

6 **Save and Close the Test Suite.**

Once created, the Test Suite is ready to have Test Cases assigned.

*Click on the **Test Suite** tab to list existing suites from the main Test Suite dialog.*

From here, we can select and open any test suite from the list, to assign cases, create new test cases, edit the attributes defined or copy the suite.

Assigning Cases to a Test Suite

Test Cases can be assigned to a Test Suite individually or as part of a Baseline

From the Test Suites tab:

1 Highlight the suite to which you will assign Test Cases.

2 Click *Assign Test Cases* to open the dialog.

3 Select, if necessary, the **Test Case Category**.

4 Filter by Baseline:**NOTE** Baseline Requirements

Should the process require that only Test Cases contained in labeled baselines be submitted for testing, the property **Transfer to Child** must be turned off in the relationship **TSU_TC** in secondary (Test Case).

This will allow the assignment of non-current, i.e., Replaced, Test Cases to the suite. For additional details, see "[Relationship Properties](#)" on page 580.

- a. Check this box, if the Test Cases are to be selected from a baseline.
- b. Select, if necessary, the Baseline Category.
- c. Select the Baseline from which the Test Cases will be selected.
- d. Proceed to [Step](#) to continue assigning cases from a Baseline.

5 Search filter is available to limit the list.**6** Check the box next to one or more cases to be added to the suite.**7** Click on the **Assign** button.**8** Assign Results are displayed.

Click Close, or **Assign More**.

To Assign Test Cases from a Baseline**9** Check **Filter by Baseline** box.**10** Select the Baseline Category.**11** From the Baseline dropdown, select the baseline containing relevant test cases.**12** Click the search to display the Test Cases in the Baseline.**13** Check the box at the top to include all or check individually.**14** Click on the **Assign** button.

The total number assigned is displayed, along with the ability to assign more.

To Reorder the Test Cases assigned to the Test Suite

Select Test Suites, to list content and open a test case.

From the open Suite, use the arrows to reorder the content.

TEST CASES 11							
+ New Assign Edit Attributes Delete ↓ ↑							
#	Test Name	Test Design Status	Description	Estimated Run Time	Priority	Baselines	Category
1	Defer Change Item	Ready	A Change Item will be deferred	5	3 - High		ALM_DEMO/Testing/CDM
2	Delete Draft Issue	Ready	Delete an issue in draft state shall be possible only for creator of the issue	10	2 - Medium		ALM_DEMO/Testing/CDM
3	Issue default values	Ready	Submit issue has some set of default values.	5	2 - Medium		ALM_DEMO/Testing/CDM
4	Login to ALM	Ready	Login to the new ALM system	10	3 - High		ALM_DEMO/Testing/CDM
5	Reject Close - Submitter	Ready	Submitter rejects close	5	2 - Medium		ALM_DEMO/Testing/CDM

To execute a Test Suite, see [Test Suite Execution and Reporting](#).

Test Suite Execution and Reporting

The Test Suite provides a facility for grouping sets of related test cases and testing each in the assigned sequence. Testers may begin by testing all cases in the suite, or only those with a particular **Execution Status**.

The **Execution Status** is a list attribute defined within the **TEST RUN** class. The default definition includes the states: Pass, Fail, Passed with Deviations, Executed, Blocked, Not Executed. The Instance Administrator can modify the state names to incorporate local process terms (see ["Attribute Definition" on page 533](#)). The associated colors can be modified in Instance Settings, see ["Test Management Settings" on page 91](#) for detail.

Exporting Test Suite Details:

One or more Test Suites may be selected for export. Select the Test Suites and choose Export Test Details to output to Word or PDF the Title, Description and Test Steps for each of the Test Cases contained in the Suite.

To Execute the Test Suite:

- 1 From Test View, select the **Test Suite** tab.
- 2 Select the Test Suite to be executed.
- 3 Choose either of the following:

Continue Run allows the tester to pick up where they left off with the selected Test Suite. If the Suite has not been run before, it will begin with the first Test Case.

Start new Run initiates new Test Runs based on the selection:

Assign Test Cases to the Suite,

Copy the highlighted Test Suite creating a new Test Runs from the assigned Test Cases.

Edit Attributes opens the Edit form for the highlighted Test Suite.

Export Test Details Exports in Microsoft Word or PDF format each Test Case, with Test Steps included in the Suite.

4 Continue Run or Start New Run:

Execute each step, testing and recording the **Actual results**, along with relevant notes and images.

Execution Status: Hover over the color squares to choose the correct outcome for each step. The defaults defined are **Passed**, **Failed**, **Passed with Deviations**, **Executed**, **Blocked**, **Not Executed**, **Not Planned**.

Passed: Process proceeds to the next step.

Failed: Process does not automatically proceed, leave notes and check the box to save.

Passed with Deviations: Process does not automatically proceed, leave notes and check the box to save.

Blocked: Process does not automatically proceed, leave notes and check the box to save.

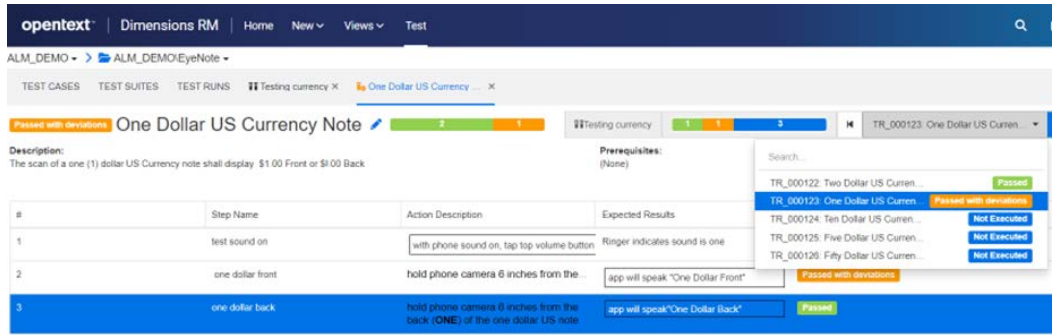
Create, if the process allows, a defect to log failure.

Link the defect with the failed step or Link the failed step to an existing defect.

	Create a new defect and link the defect to the Test Run Step that failed.
	Link the failed Test Run Step to an existing defect (Link Existing).

5 Click  the next button to proceed to the next case in the Suite.

In the **Test View**, the name of the Case currently being tested is displayed, together with the Case status, the Suite status as well as a drop-down listing all test cases included in the Suite.



Baselining the Full Test Suite

Testing, like many things in this world of ours, is never done. The team may be testing Release 4.2 of a software application, while development has started work on 4.3 Each release will contain some modified test cases, and those that have stayed the same, must all be tested in the context of the release.

Using categories, containers and baselines the test team can report and baseline. The Test Cases can be baselined such that they can be run again as established for the assigned release. While testing, the team can work out the process that allows them to run tests, make changes, run tests, and report and baseline again.

Baselining the full **Test Suite** ensures that everything included in one or a set of test suites for 4.2, including requirements from which the test cases were elicited, is locked down. That baseline can be used as the basis for the team to begin again with 4.3 - or to test 4.2.1.

To Create the Baseline:

Highlight one or more Test Suites and choose **Create Baseline** from the **Action** pane. The contents of one or more **Test Suites** (all test cases, test runs and their status) can be gathered into a baseline for reference, tracking and comparison.

The **Baseline** dialog is raised, with a suggested title, an attribute to include an optional description as well as the ability to include

linked requirements - upstream requirements linked to **Test Cases**

linked defects - downstream objects linked to **Test Steps**

Export Test Traceability

The Export Test Traceability action is intended for use with Baselines, i.e., capturing repeatable details for review and correction.

For example, if one or more Test Suites are selected and Baselined (using Create Baseline from under Test Suites from the Actions pane), this baseline can be used as input to the Export Test Traceability Action.

This action allows users to export trace reports containing all requirements in a given category or for a collection holding functional requirements, or another container populated with test cases. For creating quick trace reports, all things are possible; however for status review it is always good to use a baseline.

The Test Traceability report is configured using selected attributes for:

- All Requirements in the category
- All Requirements from selected container(s), which may include a baseline from one or more test suites.
- Test Cases from selected container(s)
- Test Runs from selected container(s)

To execute Export Test Traceability

- 1 Click on Export Test Traceability from the Actions pane.
- 2 Choose All Requirements or Requirements from Selected Containers
 - a Click the plus to identify container(s) to be included.

If this is a baseline created from one or more test suites, no more input will be necessary beyond indicating the attributes to be included for each class.
- 3 Choose requirement attributes to include.

Click on the pencil to add attributes to the selected **Requirements**.

Click on the pencil to add attributes to the selected **Test Cases**.

Click on the pencil to add attributes to the selected **Test Runs**.
- 4 If needed, click the plus to identify separate container(s) for Test Cases.
- 5 If needed, click the plus to identify separate container(s) for Test Runs.
- 6 Click on Export to export the Excel spread sheet.

Creating a Test Run

If the plan is to create Test Suites, allowing the team to gather related test cases for orderly testing, the Test Run is generated upon executed within the Suite. There is no need to create an individual test run.

However, a single Test Run can be created and executed independently, allowing the tester to review and test each execution step, mark its status, make notes, or record

defects. As each step is tested, an HTML enabled text attribute is provided to the tester to describe the test results, including images when necessary.



NOTE Test Runs

When following the full Test Management process, the creation and execution of test runs is controlled within the Test Suite.

- 1 From the Test Cases listed when the **Test Cases** tab is selected, **highlight** a test case (e.g., the example created *Test Case Creation*).
- 2 Click on the Run button, to open the **Test Run** dialog. In this dialog can be entered for example the **Responsible Tester**, a **Planned Execution Date** and a **Planned Host Name**

The Test Run dialog turns the Case into a testing tool; a single case may be used, with or without modifications, as many times as there are releases.

- 3 **Save** and Close the **Test Run**.

From the Test Run tab, all existing runs can be listed with filtering available by status or assigned tester.

- 4 Select and open a **Test Run**.
- 5 Execute each step, testing and recording the **Actual results**, along with relevant notes and images.

It is possible to create a defect and associate the defect with the failed step, or to link the failed step to an existing defect.

	Create a new defect and link the defect to the Test Run Step that failed.
	Link the failed Test Run Step to an existing defect (Link Existing).

- 6 Click the relevant color-coded Execution Status to complete the step, the system will record execution date and tester before proceeding to the next step.

When each of the steps in the case has been tested, you may close the test run tab.

Configuring Test Management

Test Management functionality was expanded in Dimensions RM release 12.11.1. The expansion includes, but is not limited to, the ability to:

- Bring all Test Management related artifacts into a single new view: **Test**
- Provide support for related sets of Test Cases in Test Suites
- Define **Test Cases** with links to Test Steps defined as separate , reusable objects
- Implementation can be completed by the Instance Administrator

The configuration of test case management requires:

Classes: see ["Adding Test Management Classes" on page 421](#).

Relationships: see ["Creating Relationships between Classes" on page 422](#).

Constraints: see ["Enable Test Management" on page 423](#).

Adding Test Management Classes

If you are unfamiliar with the creation of new classes, detail Instructions can be found in ["Schema Class Creation" on page 570](#).

The following outlines the steps necessary to define the classes and to configure Test Management functions. For an image of the completed schema see [Figure 9-3, "Test Management Schema Definition," on page 422](#).

- 1** Select Schema Definition from the Administration menu to open the Instance schema (if there are issues, see ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2** From the desired location on the schema grid, right click and select Add Class.
- 3** From the menu, select **Test Suite**.
- 4** The Class Name will default to the class type, for Test Management, we recommend that you accept the name: **Test_Suite**.
- 5** Click  to save the schema definition.

Repeat steps 2-5 for the following template classes:

- Test Run Suite
- Test Case
- Test Run
- Test Step
- Test Run Step
- Defect

Creating Relationships between Classes

In order to link the various classes to support tracking and reporting, relationships must be created between classes.

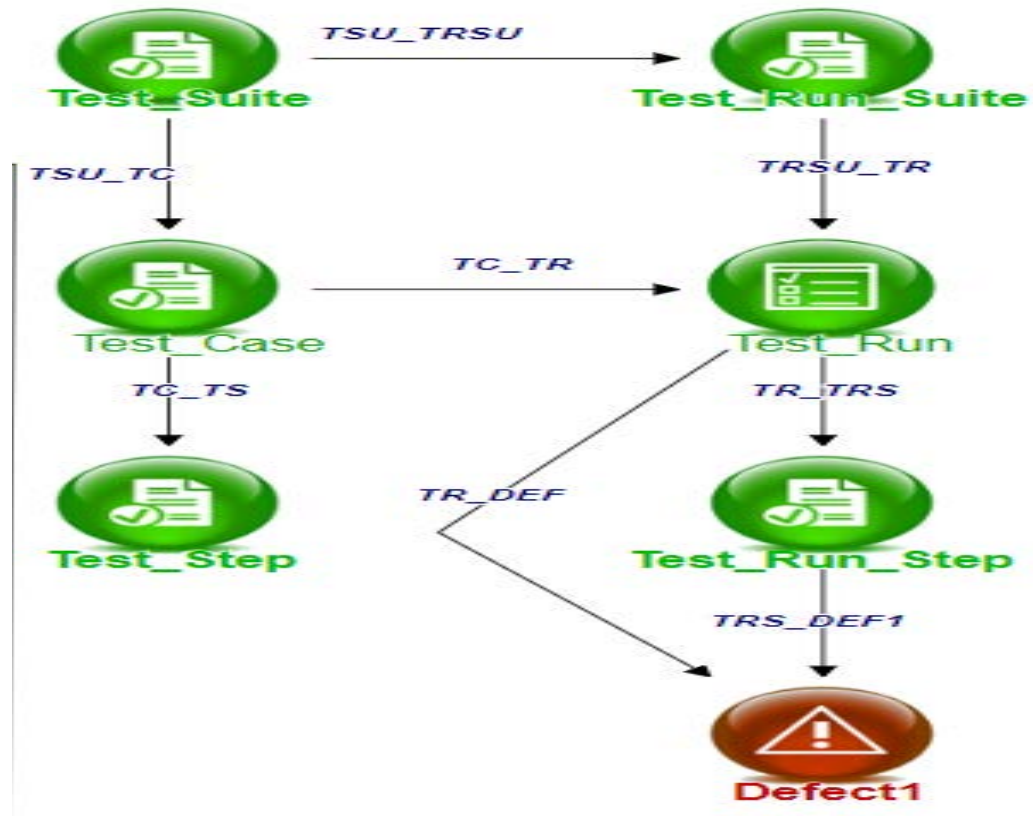


Figure 9-3. Test Management Schema Definition

To create the relationships follow these steps:

- 1 If not already open, Select Schema Definition from the Administration menu to open the Instance schema (if there are issues, see ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 From the **New** menu, select Relationship
- 3 Click inside the *Test_Suite* class.
- 4 Click inside the *Test_Run_Suite* class.
- 5 When prompted, specify the relationship name: TSU_TRSU and press **OK**.
- 6 Repeat steps 2-5 for the relationships included in the figure ["Test Management Schema Definition" on page 422](#)

From *Test_Suite* to *Test_Case*: TSU_TC

From *Test_Case* to *Test_Step*: TC_TS

From *Test_Case* to *Test_Run*: TC_TR

From *Test_Run_Suite* to *Test_Run*: TRSU_TR

From *Test_Run* to *Test_Run_Step*: TR_TRS

From *Test_Run* to Defect: *TR_DEF*

From *Test_Run_Step* to Defect: *TRS_DEF*

- 7** Click  to save the schema definition.

Enable Test Management

Once the classes and relationships for Test Management have been configured the various constraints necessary to support the full functionality are **created** when Test Management is enabled.

To enable Test Management:

- 1** Select **Instance Settings** from the **Administration** menu
- 2** Select the **Test Management** tab
- 3** **Enable** Test Management
- 4** Click **OK**.

AI Generated Test Cases

Dimensions RM continues to expand its use of Artificial Intelligence by offering functions to generate and to review.

For details, see section ["Generating Test Cases" on page 193](#).

Chapter 10

Agile

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Before you start

Before you can start using Agile with Dimensions RM, the following tasks must be executed:

- 1 Following instructions in
- 2 Agile must be enabled from the Administration Menu, Instance Settings, **General** tab (see "[General Settings](#)" on page 71).

Agile Basics

Agile artifacts and agile views:

- Agile artifacts based on RM classes
- Backlogs and Story Boards
- Product/Release/Sprint breakdown
- Calculations and visualizations on priority, effort, and progress
- Burndown reports on Release and Sprint level

Support of hybrid approaches:

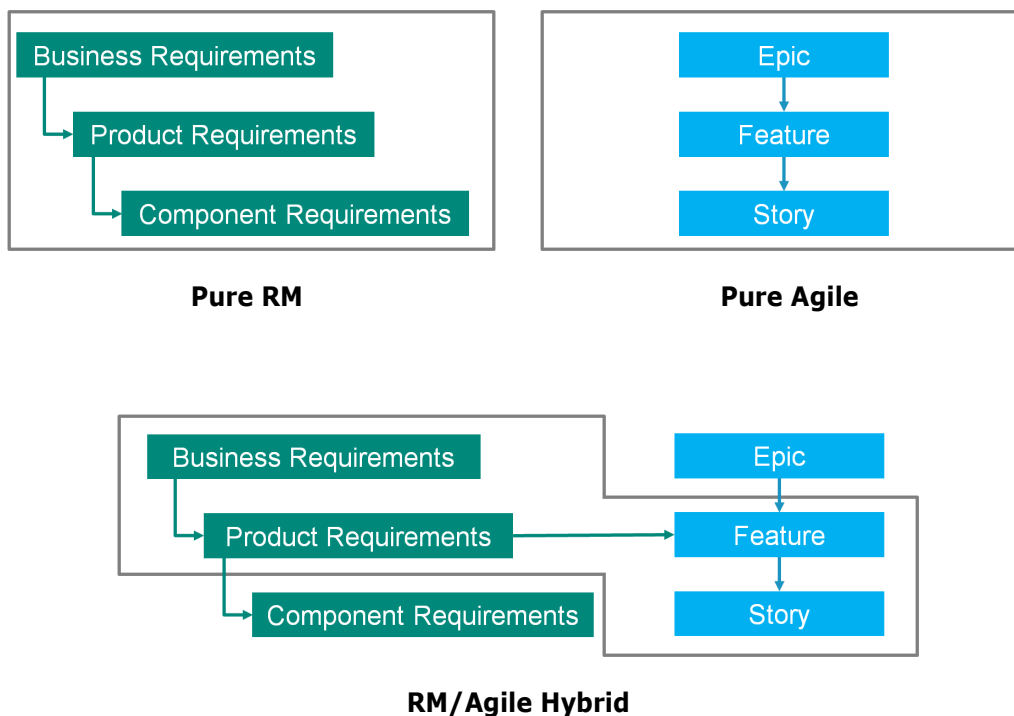
- Requirements and agile artifacts
- Traceability throughout all artifact types
- Non-functional requirements
- Re-use of Backlog and Story Boards for traditional artifacts

Integrating with development tools

- Story to be provided to development tool
- Feedback on development progress back to RM boards

Comparing Requirements Management and Agile Approaches

The following images compare the different approaches or requirement management.



Pure RM: The pure RM approach allows to define the different requirement types, but does not allow the development department to break down requirements into individual tasks.

Pure Agile: The pure Agile approach allows the development to maintain different tasks and changes between different releases, but does not connect these tasks with the requirement.

RM/Agile Hybrid: The RM/Agile hybrid approach combines the best of both worlds. The different requirement types are connected with the tasks and changes of the development department.

Accessing Agile

From **Home** choose the **Agile** Tab.



The Agile Main Menu bar is shown below the Breadcrumb. The following icons and tabs are available;



Select this icon to see additional detail concerning current Product.

Selected Product name and drop-down list.



Edit button to access and modify Product information.



New drop-down list to add objects to selected Class.

Agile Product Tabs:

Once a product is selected (to add a product, see ["Adding Agile Products" on page 440](#)), the following tabs are available.

[Agile Tabs](#)

[Product Backlog Tab](#)

[Product Storyboard Tab](#)

[Sprint Planning Tab](#)

[Sprint Storyboard Tab](#)

[Taskboard Tab](#)

About Products

A "Product" is an item to which you can assign epics, features or stories. This represents a complete product, a module or a component.

About Releases

A "Release" is linked to one product. Each release contains the epics, features, stories and sprints, which are relevant for the version. As an example, release 1.1 contains only those features, which have changed since release 1.0. A feature of such a release would also just contain those stories, which have changed since release 1.0. A release is marked .

About Stories

A story is marked .

A "Story" describes the function to be implemented. However, a story may include several tasks. If a story were "Install database", this would require several settings to be made during the installation process. These settings could be specified within the story's description. However, a story should not be something like "Install operation system and database". This should be split into two stories.

In lists, stories may show the badges described in chapter ["About Badges" on page 430](#).



TIP Change Story Priority

Drag the story for which you want to change the priority to a story which has the priority you want, e.g. story ST_1 with priority "Low" to story ST_2 with priority "High".

Release the mouse button to drop story ST_1 on ST_2. This changes the priority of story ST_1 from "Low" to "High".

About Sprints

A "Sprint" defines in which time frame the assigned stories should be completed. A sprint is marked .

About Features

A "Feature" groups several stories logically together and will be assigned to a release. The description describes what the assigned stories should accomplish. In lists, features may show the badges described in chapter ["About Badges" on page 430](#).

A feature is marked .

About Epics

An "Epic" groups several features and stories logically together and will be assigned to a release. In lists, epics may show the badges described in chapter ["About Badges" on page 430](#). An epic is marked .



NOTE Epics

If you add the Epics class after products have been created, do the following for each product you want to use Epics with:

- 1 Select the product in the **Product** drop-down list .
- 2 Click the edit button .
- 3 Ensure that **Epic** is enabled in the **Shown mapped classes** area.
- 4 Click **Save**.

About Tasks

Tasks allow you to split stories into different development steps. This gives you a more detailed overview about the progress on feature development. A task is marked .

About Mapped Classes

For epics, features, stories, and tasks, you can use more than one class. This allows to use different attribute sets, for different product types, e.g. a vehicle may need other attributes than a software. When creating or modifying a product, you find these mapped classes in the **Shown mapped classes** section of the dialog to create or modify a product. The **Shown mapped classes** section allows you to choose which classes you want to view on the Agile tabs. Note that you can only choose between several classes, if your administrator created them and configured them as described in chapter ["Managing List Attribute Values"](#) on page 555.

About Badges

In lists, epics, features, and stories provide additional information by using badges:

- User or group, e.g. 
- Priority, e.g. 

In addition, stories have the following badges:

- Effort, e.g.  (remaining effort/estimated effort)
- Ranking, e.g. 

About Capacity

For a release or sprint, you can specify the **Capacity**. This numeric value specifies how long the release or sprint needs to be completed.

On the **Overview** tab, you see a progress bar for each release or sprint if the capacity has been specified.

On the **Product Backlog** tab, you see a progress bar next to the selected release. It shows how much of the capacity is used by all assigned features based on their estimated effort.

On the **Sprint Planning** tab, you see a progress bar next to the selected sprint. It shows how much of the capacity is used by all assigned stories based on their estimated effort.

About Story Maps

A Story Map allows users to assign epics, features, and stories to a release. This is especially helpful if features are implemented in phases (e.g. the basic functionality is

implemented in release 1.0, while extended functionality is implemented in release 1.1). The following image shows the general setup of a story map:



Additional Detail Found in Tooltips

Detailed information is available concerning the products, releases, sprints, epics, features, or stories by hovering over the relevant icon:



Hover over this icon to view Product information.



Hover over this icon to view Release information.



Hover over this icon to view Sprint information.



Hover over this icon to view Epic information.



Hover over this icon to view Feature information.



Hover over this icon to view Story information.

Tooltips are also available for items which are referenced in another item, e.g. an epic or feature referenced in a story.

Agile Display Options

Next to the Product drop-down list, you find the Display Options menu . It provides these settings:

Setting	Description
Filter by Categories	Shows epics, features, and stories only for the selected category.
Show my stories only	Shows only the stories, which are assigned to the current user.
Description	All: Shows the full description of stories, features, epics, and releases underneath their titles. Shows the full Sprint goal of sprints underneath their titles. Stories: Shows the full description of a story underneath its title. Hide: Hides the description of stories, features, epics, sprints, and releases.
Parent Info	Shows the information of parents (epics and features) on the card.
Assigned features/stories	Gray: Shows those features and stories which are assigned to a release, with a gray background. Hide: Hides those features and stories which are assigned to a release.
Release progress	Show: The progress is shown by changing the background of an item into a progress bar. Hide: No progress is shown.
Sprint progress	Show: The progress is shown by changing the background of an item into a progress bar. Hide: No progress is shown.
Story progress	Show: The progress is shown by changing the background of an item into a progress bar. Hide: No progress is shown.
Show Empty Artifacts	Shows features and stories which have not been assigned to an epic.
Show Release Backlog	Shows stories that have not assigned to releases and sprints on the Story Map .
Truncate Story descriptions	Collapses story descriptions to a single line and removes images and tables. This setting is only used with the Story Map .
Show "Assigned To" badge	Shows the badge of the user or group to which a story is assigned.
Show "Effort" badge	Shows the effort badge of a story.
Show "Priority" badge	Shows the priority badge of a story.
Show "Ranking" badge	Shows the ranking badge of a story.
Show on Card	Shows the selected story attribute on its card.

Showing or Hiding Attributes in Dialogs

For any dialog used to create, show, or edit a product, release, sprint, epic, feature, or story, you can show or hide any of the default Agile attributes. To show or hide an attribute, select it from the **Customize Fields** drop-down list. Displayed attributes show a check mark. An asterisk following the attribute name shows that the attribute is mandatory.

Showing Additional Story Attributes on Cards

Additional attributes can be included on Story cards to provide a more insight into important data. Recognizing the needs at different stages of development, each Agile tab is configured independently.

To show additional Story attributes:

- 1 Open the **Show on Card** drop-down.
- 2 Select the attributes you want to show on Story cards.



NOTE Tooltips

You can also show tooltips for the epics and features if they are shown in the story cards. For further information about tooltips, see chapter ["Additional Detail Found in Tooltips" on page 431](#).

Agile Tabs

Overview Tab

The Overview tab displays relevant items in hierarchical lists and allows easy filtering. By using the Overview, you can easily find out which sprints are related to which feature and product.

The Overview tab is divided into these sections:

- [Burndown Diagram](#)
- [Release List](#)
- [Sprint List](#)
- [Stories List](#)

Burndown Diagram

The Burndown diagram is displayed when a release or sprint is selected.

Release Burndown Diagram: Shows the remaining effort and estimated effort for the related sprints.

Sprint Burndown Diagram: Shows the remaining effort and estimated effort for the related stories.

Both diagrams allow you to easily recognize if the deadline can be met.

Based on the previous values, the burndown diagram forecasts the future development. For easy recognition, the forecasted values are shown in a different color.

You can choose between these different diagram types:

- Line chart
- Area chart
- Bar chart
- Column chart

Release List

The release list shows all releases for the selected product. If the capacity has been specified, a progress bar is shown for each release. Selecting a release loads the burndown diagram and the sprint list.

Sprint List

The sprint list shows all sprints for the selected release. If the capacity has been specified, a progress bar is shown for each sprint. Selecting a sprint loads the assigned stories and the Burndown diagram.

Stories List

The stories list shows all stories for the selected sprint or release. If no sprint is selected, click **Load Stories** to load the stories for the selected release.

Product Backlog Tab

On the **Product Backlog** tab, you can do the following:

- Define features, stories or other artifacts for one product
- Group stories
- Prioritize
- Define acceptance criteria
- Scope items to one or more product releases

The **Product Backlog** tab is divided into these sections:

Product Backlog: Shows features and stories, which are not assigned to any release.

Release: Shows epics, features and stories, which are assigned to the selected release.

Depending on the **Assigned features/stories** setting in the Display Options menu (see ["Agile Display Options" on page 432](#)), you may also see assigned features or stories in the **Product Backlog** list.

Assigning and Un-Assigning Features or Epics

To assign a feature or epic to a release, drag it from the **Product Backlog** list to the **Release** list and drop it there. After assigning a feature or epic to a release, the related stories are assigned to the selected release and become available in the **Product Storyboard**.

Alternatively, you can assign a feature or epic to a release by executing these steps:

- 1 Double-click the feature or epic you want to assign.
This opens the edit dialog for that feature or epic.
- 2 In the **Release** box, select the desired release.
- 3 Click **Save**.

To un-assign a feature or epic, drag it from the **Release** list to the **Product Backlog list** and drop it there. This un-assigns the stories from the selected release.

Alternatively, you can un-assign a feature or epic from release by executing these steps:

- 1 Double-click the feature or epic you want to un-assign.
This opens the edit dialog for that feature or epic.
- 2 Click  next to the **Release** box.
- 3 Click **Save**.

Assigning Stories

To assign a story to a release, drag it from the **Product Backlog** list or from a feature in the **Product Backlog** list and drop it on the **Release** list or on a feature in the **Release** list.

Alternatively, you can assign a story to a release by executing these steps:

- 1 Double-click the story you want to assign.
This opens the edit dialog for that story.
- 2 In the **Release** box, select the desired release.
- 3 If desired, select the feature in the **Feature** box.
- 4 Click **Save**.

Un-Assigning Stories

To un-assign a story from a release, drag it from the **Release** list or from a feature in the **Release** list and drop it on the **Product Backlog** list or on a feature in the **Product Backlog** list.

Alternatively, you can un-assign a story from release by executing these steps:

- 1 Double-click the story you want to un-assign. This opens the edit dialog for that story.
- 2 Click  next to the **Release** box.
If desired, select a feature from the Feature box or click  next to the Feature box to un-assign the feature.

- 3 Click **Save**.

Story Map Tab

On the **Story Map** tab, you can do the following:

- Show progress for Epics, Features, Sprints, and Releases
- Show the total planned effort for Epics and Features
- Show capacity and dates for Sprints and Releases



NOTE Using the Story Map

NOTE The Story Map is best used with a small number of items. Thus, these are the maximum number of items allowed:

- **Epics:** 20
- **Sprints:** 20
- **Stories:** 200

If the number of epics, sprints, or stories exceeds above limits, use filters to limit their numbers (see chapter ["Filters" on page 448](#)). Alternatively, you might could display the items on other tabs or move the items (e.g. into a new release).

Product Backlog

The **Product Backlog** can be shown by clicking , which is located at the right side window border. The Product Backlog provides the following functions:

 Select multiple items	Shows or hides check boxes, which allow you to select multiple items.
 Select/un-select all items	Selects all items.
 Create new item	Creates a new Story.

Product Storyboard Tab

On the **Product Storyboard** tab, you can do the following:

- Elaborate Stories
- Move stories through analysis stages
- Estimate effort
- Review
- Approve for sprint readiness

The **Product Storyboard** tab is divided into these sections:

Elaborated: Contains stories which have been assigned to a release, but have not been planned for sprint assignment or assigned to a sprint.

Pre-Planning: An optional intermediate step which contains all stories you want to assign to a sprint (in the future).

Sprint-Ready: Contains stories which can be assigned to a sprint.

To change the planning status of a story, you can drag it to the desired state and drop it there.

Alternatively, you can change the planning status by executing these steps:

- 1 Double-click the story for which you want to change the Planning Status. This opens the edit dialog for that story.
- 2 In the **Planning Status** box, select the desired state.
- 3 Click **Save**.

Sprint Planning Tab

On the **Sprint Planning** tab, you can do the following:

- Scope stories into sprints
- Prioritize
- Assign stories

The **Sprint Planning** tab is divided into these section:

Release Backlog: Contains stories which have not been assigned to a sprint.

Sprint: Contains stories which have been assigned to the selected sprint.

By default, the Sprint Planning tab shows all sprints. To show the stories assigned to a sprint, click  next to the sprint name.

To show only one sprint, select a sprint from the **Sprint** box. If you want to show all sprints again, click **Show all**.

Sprint Capacity

If one sprint is selected in the **Sprint** box, the **Capacity** progress bar is located next to it. If all sprints are shown, the capacity progress bar is shown for each sprint individually.

For more information about the capacity progress bar see chapter ["About Capacity" on page 430](#).

Assigning Stories to Sprints

To assign a story to the selected sprint, drag it from the **Release Backlog** list to the **Sprint** list and drop it there. If you show all sprints, drop it onto the desired sprint in the **Sprint** list.

Alternatively, you can assign a story to a sprint by executing these steps:

- 1 Double-click the story you want to assign or un-assign.
This opens the edit dialog for that story.
- 2 In the **Sprint** box, select the desired sprint.
- 3 Click **Save**.

To **un-assign a story**, drag it from the **Sprint** list to the **Release Backlog** list and drop it there.

Alternatively, you can un-assign a story from sprint by executing these steps:

- 1 Double-click the story you want to un-assign.
This opens the edit dialog for that story.
- 2 Click  next to the **Sprint** box.
- 3 Click **Save**.

Sprint Storyboard Tab

On the **Sprint Storyboard** tab, you can do the following:

- Move stories through lifecycle stages
- Re-assign stories
- Can also be used for requirements analysis sprints

The **Sprint Storyboard** tab is divided into these sections:

- **Not Started:** Contains stories on which implementation has not yet started.
- **In Development:** Contains stories which are currently in development.
- **In Test:** Contains stories which have been developed and are now being tested.
- **In Review:** Contains stories which have been developed and are now under review.
- **Accepted:** Contains stories which have passed the review phase successfully.

To change the Sprint status of a story, you can drag it to the desired state and drop it there.

Alternatively, you can change the Sprint Status by executing these steps:

- 1 Double-click the story for which you want to change the Sprint Status.
This opens the edit dialog for that story.
- 2 In the **Sprint Status** box, select the desired state.
- 3 Click **Save**.

Taskboard Tab

On the **Taskboard** tab, you can manage tasks. To manage tasks, you must select a sprint first.

Creating a Task without Options



NOTE Task Creation without Options

If you choose this method to create a task, the task will contain the following data:

- **Task Name** as entered
- **Task Status** as selected by the column the task is created in
- **Priority** as specified by its the default value
- **Assigned To** with own user account if possible
- **Description** remains empty
- **Log** remains empty

To create a task, do following:

- 1 Hover your mouse pointer over a story.
- 2 Click  in the column with the desired sprint status.
- 3 Type the name of the task.
- 4 Click  to save the task.

Creating a Task with Options



NOTE Task Creation with Options

If you choose this method to create a task, you can specify the values for each attribute of the task.

To create a task, do following:

- 1 Select a story.
- 2 From the **New** menu, select **Task**. This opens the **Tasks** dialog.
- 3 Specify the **Name**.
- 4 Specify the value for each other attribute as required or desired.
- 5 Click **Save**.

Editing a Task

To edit a task, do the following:

- 1 Double-click the desired task.
- 2 Modify attributes as desired.
- 3 Click **Save**.

Changing the Task Status

To change the task status, you can either edit the task and modify the attribute there (see chapter ["Editing a Task" on page 440](#)), or move the task to the column showing the desired task status using drag and drop.



NOTE Moving Tasks

When using drag and drop to move the task and all other tasks for that story you may be prompted, depending on status, to update related stories. If you wish to modify those stories, change **Estimated Effort**, **Remaining Effort** and **Sprint Status** and click **Save**.

Deleting a Task

To delete a task, do the following:

- 1 Move the mouse pointer towards the middle of the desired task.
- 2 Move the mouse pointer straight down, stopping just under the task.
- 3 Click .
- 4 Confirm to delete the task.

Changing a Task Marker

- 1 Move the mouse pointer towards the middle of the desired task.
- 2 Move the mouse pointer straight down, stopping just under the task.
- 3 Click .
- 4 Select one of the pre-defined colors or click **Clear** to remove the marker.

Using Agile

Adding Agile Products

When adding or modifying a product the **Shown mapped classes** section allows you to do the following:

Show or hide releases for a product on all Agile tabs.

Show or hide sprints for a product on all Agile tabs.

Select or hide classes for epics, features, stories, and tasks for a product on all Agile tabs.

To add a product, execute these steps:

- 1 In the Agile **New** menu, select **Product**.
- 2 Populate the fields of the dialog as needed.
- 3 If desired, specify which classes shall be visible on the Agile tabs by modifying the settings in the **Shown mapped classes** section. For more information about mapped classes, see chapter ["About Mapped Classes" on page 430](#).
- 4 To specify the visible views, you can enable or disable and specify the tab headers on the following options:
 - Overview
 - Product Backlog
 - Story Map
 - Product Storyboard
 - Sprint Planning
 - Sprint Storyboard
 - Taskboard

By default, all above options are selected.

- 5 Click one of the following buttons:

Save: Saves the new product and closes the dialog.

Save & New: Saves the new product and opens a new empty *New Products* dialog to create a new product.

Editing Agile Products

To edit a product, execute these steps:

- 1 In the **Product** drop-down , select the product you want to edit.
- 2 Click the Edit button  next to the Product drop-down. This opens the Products dialog.
- 3 Edit the product as desired.
- 4 If desired, specify which classes shall be visible on the Agile tabs by modifying the settings in the **Shown mapped classes** section. For more information about mapped classes, see chapter ["About Mapped Classes" on page 430](#).
- 5 Click **Save**.

Deleting Products

To delete a product, execute these steps:

- 1 In the **Product** drop-down , select the product you want to delete.

- 2 Click the Edit button  next to the **Product** drop-down. This opens the Products dialog.
- 3 Click **Delete**.
- 4 Confirm the deletion dialog by clicking **OK**.

Manual Product Assignment

If you created a product by selecting **Products** in the **New** menu of the menu bar, import or web service, several assignments are not made.

To use the product with Agile, do the following:

- 1 Identify the category, the product resides in, e.g. by searching the product with Quick Search (see chapter "Quick Search Filtering" on page 185).
- 2 Click the **Agile** icon  in the menu bar. This opens the Agile view.
- 3 Select the category you identified in step 1 from the list underneath the menu bar.
- 4 Select the product in the **Product** drop-down list .
- 5 Click the edit button .
- 6 If desired, specify which classes shall be visible on the Agile tabs by modifying the settings in the **Shown mapped classes** section. For more information about mapped classes, see chapter ["About Mapped Classes" on page 430](#). When using releases, tick the **Releases** box.
- 7 Select the tabs you want to display. To display a tab, tick the associated box. There are these tabs:
 - Overview
 - Product Backlog
 - Story Map
 - Product Storyboard
 - Sprint Planning
 - Sprint Storyboard
 - Taskboard
- 8 Click **Save**.

Using Releases

Adding Releases

To add a release, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to add a release.
- 2 In Agile's **New** menu, select **Release**. This opens the *New Releases* dialog.
- 3 Complete the fields of the dialog as needed.

- 4 In the **Capacity** box, specify the maximum duration (e.g. days) in which the release must be completed.
- 5 Click one of the following buttons:
 - Save:** Saves the new release and closes the dialog.
 - Save & New:** Saves the new release and opens a new empty *New Releases* dialog to create a new release.

Editing Releases

Releases are available on several tabs and can be edited on any of those tabs. For simplification, the following steps describe the process only for the **Overview** tab.

To edit a release, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to edit a release.
- 2 Select the **Overview** tab.
- 3 Double-click the release you want to edit. This opens the Releases dialog.
- 4 Edit the release as desired.
- 5 Click **Save**.

Deleting Releases

Releases are available on several tabs and can be deleted on any of those tabs. For simplification, the following steps describe the process only for the **Overview** tab.

To delete a release, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to delete a release.
- 2 Select the **Overview** tab.
- 3 Double-click the release you want to delete. This opens the Releases dialog.
- 4 Click **Delete**.
- 5 Confirm the deletion dialog by clicking **OK**.

Using Epics

Adding Epics

To add an epic, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to add an epic.
- 2 In Agile's **New** menu, select **Epic**. This opens the *New Epics* dialog.
- 3 Complete the fields of the dialog as needed.
- 4 Click one of the following buttons:
 - Save:** Saves the new feature and closes the dialog.

Save & New: Saves the new feature and opens a new empty *New Epics* dialog to create a new epic.

Editing Epics

To edit an epic, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to edit an epic.
- 2 Select the **Product Backlog** tab.
- 3 If the epic is assigned to a release, select the release in the **Release** drop-down .
- 4 Double-click the epic you want to edit. This opens the Epics dialog.
- 5 Edit the epic as desired.
- 6 Click **Save**.

Deleting Epics

To delete an epic, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to edit an epic.
- 2 Select the **Product Backlog** tab.
- 3 If the epic is assigned to a release, select the release in the **Release** drop-down .
- 4 Double-click the epic you want to delete. This opens the Epics dialog.
- 5 Click **Delete**.
- 6 Confirm the deletion dialog by clicking **OK**.

Using Features

Adding Features

To add a feature, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to add a feature.
- 2 In Agile's **New** menu, select **Feature**. This opens the *New Features* dialog.
- 3 Complete the fields of the dialog as needed.
- 4 Click one of the following buttons:

Save: Saves the new feature and closes the dialog.

Save & New: Saves the new feature and opens a new empty *New Features* dialog to create a new feature.

Editing Features

To edit a feature, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to edit a feature.

- 2 Select the **Product Backlog** tab.
- 3 Double-click the feature you want to edit. This opens the Features dialog.
- 4 Edit the feature as desired.
- 5 Click **Save**.

Deleting Features

To delete a feature, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to delete a feature.
- 2 Select the **Product Backlog** tab.
- 3 Double-click the feature you want to delete. This opens the Features dialog.
- 4 Click **Delete**.
- 5 Confirm the deletion dialog by clicking **OK**.

Using Stories

Adding Stories

To add a story, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to add a story.
- 2 In Agile's **New** menu, select **Story**. This opens the *New Stories* dialog.
- 3 Complete the fields of the dialog as needed.
- 4 Click one of the following buttons:
 - Save:** Saves the new story and closes the dialog.
 - Save & New:** Saves the new story and opens a new empty *New Stories* dialog to create a new story.

Editing Stories

Stories are available on several tabs and can be edited on any of those tabs. For simplification, the following steps describe the process only for the **Overview** tab.

To edit a story, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to edit a story.
- 2 Select the **Overview** tab.
- 3 Select a release and a sprint.
- 4 Double-click the story you want to edit. This opens the Stories dialog.
- 5 Edit the story as desired.
- 6 Click **Save**.

Deleting Stories

Stories are available on several tabs and can be deleted on any of those tabs. For simplification, the following steps describe the process only for the **Overview** tab.

To delete a story, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to delete a story.
- 2 Select the **Overview** tab.
- 3 Select a release and a sprint.
- 4 Double-click the story you want to delete. This opens the Stories dialog.
- 5 Click **Delete**.
- 6 Confirm the deletion dialog by clicking **OK**.

Using Sprints

Adding Sprints

To add a sprint, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to add a sprint.
- 2 In the Agile **New** menu, select **Sprint**. This opens the *New Sprints* dialog.
- 3 Complete the fields of the dialog as needed.
- 4 In the **Capacity** box, specify the maximum duration (e.g. days) in which the sprint must be completed.
- 5 Click one of the following buttons:
 - Save:** Saves the new sprint and closes the dialog.
 - Save & New:** Saves the new sprint and opens a new empty *New Sprints* dialog to create a new sprint.

Editing Sprints

Sprints are available on the **Overview** tab, **Sprint Planning** tab, and **Sprint Storyboard** tab. You can edit sprints on any of those tabs. For simplification, the following steps describe the process only for the **Overview** tab.

To edit a sprint, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to edit a sprint.
- 2 Select the **Overview** tab.
- 3 Select a release.
- 4 Double-click the sprint you want to edit. This opens the Sprints dialog.
- 5 Edit the story as desired.
- 6 Click **Save**.

Deleting Sprints

Sprints are available on several tabs and can be deleted on any of those tabs. For simplification, the following steps describe the process only for the **Overview** tab.

To delete a sprint, execute these steps:

- 1 In the **Product** drop-down , select the product for which you want to edit a sprint.
- 2 Select the **Overview** tab.
- 3 Select a release.
- 4 Double-click the sprint you want to delete. This opens the Sprints dialog.
- 5 Click **Delete**.
- 6 Confirm the deletion dialog by clicking **OK**.

Using Teams with Agile

Teams in Agile allow you to assign releases, or sprints to a team. The team can then filter for releases, or sprints assigned to them. To use teams, the function must be enabled. For more details about teams, see chapter “Managing Teams” on page 515).

For all Agile classes supporting teams (releases, sprints, and stories), the assignment of teams is optional. This is the suggested workflow:

- 1 Assign one or several teams to a release.
- 2 Assign one or several teams to a sprint which is assigned to a release.

No teams assigned to the release: You can select from all teams.

Teams assigned to the release: You can select from those teams assigned to the release.

Viewing Linking History of an Item

For epics, features, releases, and sprints, you can view the linking history. To open the linking history, do the following:

- 1 Open an item that is linked with the history entry you want to check (e.g. a story).
- 2 Click the icon next to the drop-down box for which you wish to view the linking history.

Epic or feature shows the linking history for both, epics and feature.

Release or sprint shows the linking history for both, release and sprint.

- 3 Hover a link of an entry to show a tooltip with additional information of the linked item.

Filters

The Agile tabs allow several options for filtering. Please note that not all options are available on all tabs.

To filter the Story Map, select one or several of these drop-downs:

Options  list:

Filter by Categories: Shows epics, features, and stories only for the selected category.

Show my stories only: Shows only the stories, which are assigned to the current user.

Items  list: Filters stories according to the following options:

Priority: Select the priority or priorities to you wish to filter.

Assigned To: Select the owners you wish to filter. Clicking **Me** sets the filter to your user account. Clicking  opens the **Find & Select User** dialog, which allows you to find a user. For further details, see chapter ["Find and Select List Values" on page 41](#).

Color: Select one or several colors you wish to filter.

Epic: Select one or several epics for which you want to display the related stories.

Feature: Select one or several features for which you want to display the related stories.

Filter items... input box: Filters all displayed items for the text entered into the box.

Product  list: Select the product for which you want to display related items.

Release  list: Select one or several releases for which you want to display related items.

Sprint  list: Select one or several sprints for which you want to display related items.

Feature  list: Select one or several features for which you want to display related items.

Column  : Select a column filter to only display the column with its stories. This filter is only available on the **Product Storyboard** tab.

Sorting

You can sort items for the following properties:

- Assigned To
- Name
- Priority
- Ranking

Configuring Agile Classes and Process

Dimensions RM Agile functionality includes, but is not limited to, the ability to:

- Bring all Agile related objects into a single view: **Agile**
- Provide support for the organizations process as it relates to the definition of selected Agile Classes, e.g., Products, Releases, Features, Sprints, Stories and Tasks.
- The configuration and Implementation of Agile functionality can be completed by the Instance Administrator

The configuration requires:

Classes: see ["Adding Agile Classes" on page 449](#).

Relationships: see ["Creating Relationships Between Agile Classes" on page 450](#).

Adding Agile Classes

If you are unfamiliar with the creation of new classes, detail Instructions can be found in ["Schema Class Creation" on page 570](#).

To use the full set of Agile functionality, your classes must have attributes of certain types. You are free to name these classes and the attributes as you like, however, our default classes use "standard" naming.

The following outlines the steps necessary to define the classes and to configure Agile process. For an image of the completed schema see [Figure 10-1, "Sample Agile Schema Definition," on page 450](#).

- 1 Select Schema Definition from the Administration menu to open the Instance schema (if there are issues, see ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 From the desired location on the schema grid, right click and select Add Class.
- 3 From the menu, select *Product*.
- 4 The Class Name will default to the class type, for Test Management, in our Agile schema we have named this class **Products**.
- 5 Click  to save the schema definition.

Repeat steps 2-5 for the following template classes:

- a Epics
- b Features
- c Releases
- d Sprints
- e Stories
- f Tasks

Creating Relationships Between Agile Classes

In order to link the various classes to support tracking and reporting, relationships must be created between classes.

To create the relationships follow these steps:

- 1 If not already open, Select Schema Definition from the Administration menu to open the Instance schema (if there are issues, see ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 From the **New** menu, select **Relationship**
- 3 Click inside the *Products* class.
- 4 Click inside the *Epics* class; the line will be drawn.
- 5 In the **Add Relationship** dialog specify the relationship name, *Products_to_Epics* in our example, and press **OK**.

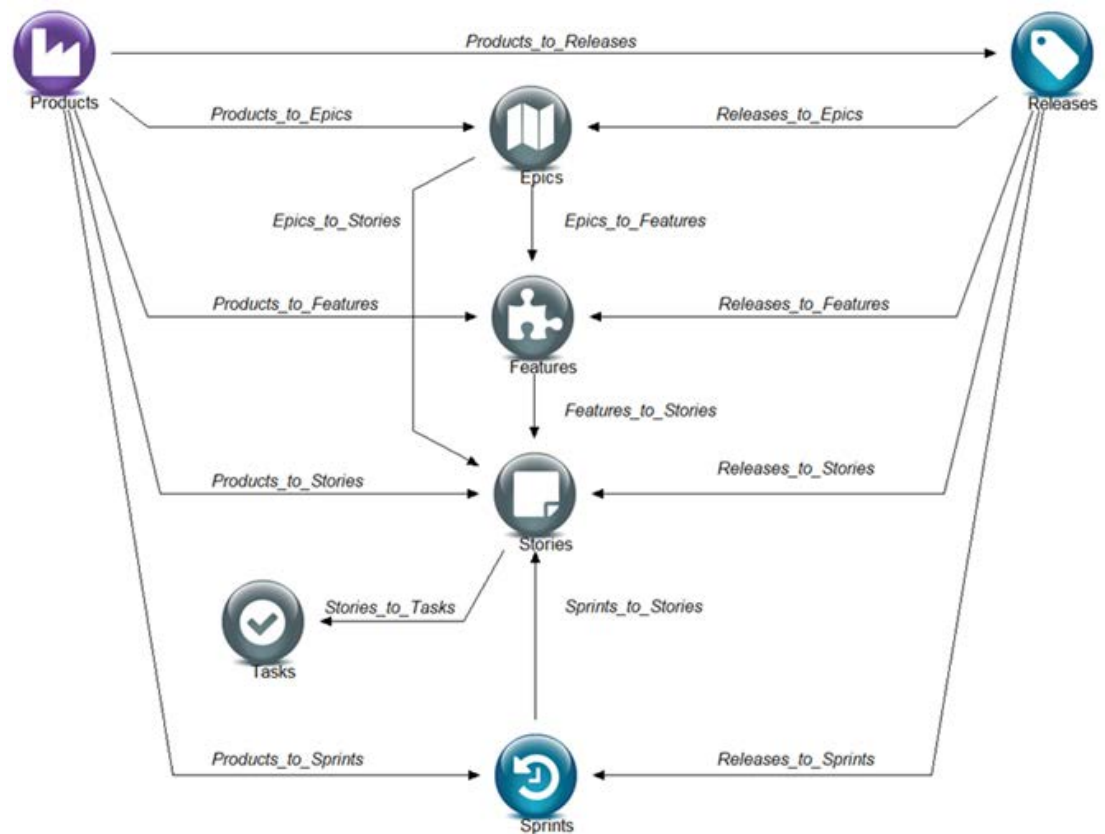


Figure 10-1. Sample Agile Schema Definition

- 6 Repeat steps 2-5 for the relationships included in the [Sample Agile Schema Definition](#).
 - a From *Epics* to *Features*.
 - b From *Epics* to *Stories*.
 - c From *Features* to *Stories*.
 - d From *Products* to *Epics*.

- e** From *Products* to *Features*.
- f** From *Products* to *Sprints*.
- g** From *Products* to *Stories*.
- h** From *Releases* to *Epics*.
- i** From *Releases* to *Features*.
- j** From *Releases* to *Sprints*.
- k** From *Releases* to *Stories*.
- l** From *Sprints* to *Stories*.
- m** From *Stories* to *Tasks*.

7 Click  to save the schema definition

Configuring Agile Implementation Settings

To provide Agile process to RM Users:

- Classes and relationships must be created by the administrator ("[Configuring Agile Classes and Process](#)" on page 449)
- The class names selected by the Instance Administrator must be mapped, as described in the following section.
- Finally, the Agile Instance Settings must be enabled "[• Agile](#)" on page 72.



NOTE Agile Classes

For epics, features, stories, and tasks, multiple classes can be used, thus allowing the use of different attribute sets depending on the product.

To open the Agile Settings dialog:

Select **Agile Settings** from the Administration menu. This tab is available only for members of the Administrator group, and only in instances in which Agile has been configured.

The following describe the configuration of:

[Products](#)

[Releases](#)

[Sprints](#)

[Epics](#)

[Features](#)

[Stories](#)

Products

The Products mapping is a required setting.

To edit the Products mapping do the following:

- 1 Select **Agile Settings** from the Administration menu. This opens the Agile Settings dialog.
- 2 Select **Products**.
- 3 In the **Products Mapping** section, select the class you wish to assign to Agile Product functionality from the **Products class** dropdown.
- 4 In the **Field Mapping** section, match the agile field names to the attributes in the selected class.
- 5 Click **Save**.
- 6 Click **Close**.

Releases

The Releases mapping is an optional setting. If this setting is not configured, you cannot use releases with Agile.

To edit the Releases mapping do the following:

- 1 Select **Agile Settings** from the Administration menu to open the Agile Settings dialog.
- 2 Select **Releases**.
- 3 In the **Releases Mapping** section, select the class you wish to use with assign to Agile Releases functionality from the **Releases** box.
- 4 In the **Field Mapping** section, match the agile field names to the attributes in the selected class.
- 5 Click **Save**.
- 6 Click **Close**.

Sprints

The Sprints mapping is an optional setting. If this setting is not configured, you cannot use sprints with Agile.

To edit the Sprints mapping do the following:

- 1 Select **Agile Settings** from the Administration menu. This opens the Agile Settings dialog.
- 2 Select **Sprints**.
- 3 In the **Sprints Mapping** section, select the class you wish to use with assign to the Agile Sprint functionality from the **Sprints** box.
- 4 In the **Field Mapping** section, match the agile field names to the attributes in the selected class..
- 5 Click **Save**.
- 6 Click **Close**.

Epics

The Epics mapping is an optional setting. If this setting is not configured, you cannot use epics with Agile.

To edit the Epics mapping do the following:

- 1 Select **Agile Settings** from the Administration menu. This opens the Agile Settings dialog.
- 2 Select **Epics**.
- 3 In the **Epics Mapping** section, select the class you wish to use with assign to Agile's Epics functionality from the **Epics** box.
- 4 In the **Field Mapping** section, match the agile field names to the attributes in the selected class.
- 5 Click **Save**.
- 6 Click **Close**.

Features

The Features mapping is an optional setting. If this setting is not configured, you cannot use features with Agile.

To edit the Features mapping do the following:

- 1 Select **Agile Settings** from the Administration menu. This opens the Agile Settings dialog.
- 2 Select **Features**.
- 3 In the **Features Mapping** section, select the class you wish to use with assign to Agile Features functionality from the **Features** box.
- 4 In the **Field Mapping** section, match the agile field names to the attributes in the selected class..
- 5 Click **Save**.
- 6 Click **Close**.

Stories

The Stories mapping is an optional setting. If this setting is not configured, you cannot use features with Agile.

To edit the Stories mapping do the following:

- 1 Select **Agile Settings** from the Administration menu. This opens the Agile Settings dialog.
- 2 Select **Stories**.
- 3 In the **Stories Mapping** section, select the class you wish to use with assign to Agile Stories functionality from the **Stories** box.
- 4 In the **Field Mapping** section, match the agile field names to the attributes in the selected class.
- 5 Click **Save**.

- 6 Click **Close**.

Clearing Agile Mappings

To clear a single Agile mapping, do the following:

- 1 Select **Agile Settings** from the Administration menu. This opens the Agile Settings dialog.
- 2 Click .
- 3 Confirm the following message by clicking **Reset**.

To clear all Agile mappings, do the following:

- 1 Select **Agile Settings** from the Administration menu. This opens the Agile Settings dialog.
- 2 Click **Reset**.
- 3 Confirm the following message by clicking **Reset**.

Chapter 11

The Import Applications

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Design and Import

RM Import Designer and RM Import provide users with the ability to import existing Microsoft® Word documents into Dimensions RM, maintaining as much as possible of the structure.

With RM Import Designer, templates can be created for various document types. For example, if software and system requirements have been managed in Word Documents, templates can be created for each identifying requirement categories, classes, attributes prior to import. These templates can be saved to the database for future reuse.

RM Import allows users to preview a Word document, change the description of chapters, reorganize the chapters, change the values of attributes, move attributes between chapters, and so on. When satisfied with the document, users can import document and requirements as a unit, such that both documents and requirements can be managed within RM.

This Section discusses RM Import, the instructions refer to the import of documents using templates created using RM Import Designer. For information on how to create templates, see Section [RM Import Designer](#).

Note the following:

- RM Import is parsing Word files, it is necessary that Microsoft Office be installed on the computer executing RM Import.

Before you use RM Import, be sure that Word is activated (that is, open Word at least once before using RM Import).

- Everything in the Word document up to the first heading, except for the Table of Contents, becomes the document description. The document description is captured as an HTML-enabled attribute and can include tables, images, and so on.
- Chapters are captured based on Word headings.
- All subheadings become subchapters until and unless they are later identified as requirements.
- RM Import attempts to import the bodies of the chapters that are not identified as requirements into the description of the chapter. This helps ensure that all data from the Word document is captured.
- Chapters do not need to contain any requirements, they will still be created.
- You can import the requirements from the documents into one class or multiple classes. However, each chapter can contain requirements from only one class.

Logging into RM Import

RM Import Designer and RM Import can be installed on the desktops of selected users. Please see the chapter *Installing the Administrator Client* in the "Dimensions RM Installation Guide".

Logging in to RM Import is a two-part process:

- Validating the connection to the server

- Logging in to the Dimensions RM instance

The server validation must occur before you can log in to a Dimensions RM instance. If you are using secure socket layers (SSL), a certificate selection dialog may be displayed during the server validation.

Prior to login you must know the URL of the Dimensions RM server running the web service, for example: `https://dimensionsrm.com/rtmBrowser/WebServices`

- 1 To log in to RM Import, perform one of the following:
 - **From the Start menu** select **RM Import** or
 - **Double-click the RM Import shortcut** on your desktop.
- 2 The **RM Import login** dialog box opens.

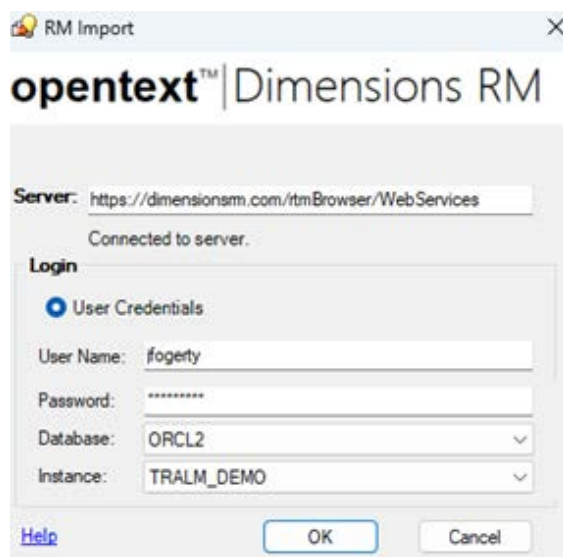


Figure 11-1. Login Dialog

- a In the **Server** field, copy the path to rtmBrowser, for example:
`https://dimensionsrm.com/rtmBrowser`
`https://dimensionsrm.com:8080/rtmBrowser`
- b And then include /WebServices:
`https://dimensionsrm.com:8080/rtmBrowser/WebServices`
- c Once the Server field has been populated, click **into the User Name** field to connect to the server.
- d In the **Password** field, type your password.
- e In the **Database** field, select the Dimensions RM database from which you want to work.
- f In the **Instance** field, select the instance with which you want to work.

The instances in the list are those that you have permission to log in to. If no instances appear in the list, then either an error occurred or you do not have permissions for any instance on the server.

- g Click **OK**. This opens the Import File Format dialog.

Command Line RM Import

For customers converting from a document based requirements management system to Dimensions RM, it is possible, once the Template has been created using RM Import Designer, to import documents via the command line.

```
RMImport.exe /import /server /Document C:\inputdoc.doc.x /template  
"TDRBasicTemplate" /db mydatabase /proj myinstance /user ImportUser  
/pw UserPassword /output C:\output.log /category RMDemo\Data
```

Input File Format Dialog

The Import File Format dialog allows you to choose the format of the file to import. These file formats are supported:

- Word Documents (*.doc, *.docx, *.dot or *.dotx)
- Draft Requirement Documents (*.drd or *.xml)
- Excel Spreadsheets (*.xls or *.xlsx)

Do one of the following:

- To import a Word document, click on **Import Word document**
- To import a Draft Requirement document, click on **Import an existing draft document**
- To import an Excel spreadsheet, click on **Import an Excel sheet**

Word Documents with RM Import

The Word Import function of RM Import allows you to import Word files with .doc, .docx, .dot and .dotx file extension. RM Import can import the Word document as a whole document or extract requirements from it and store them in Dimensions RM with the classes defined in the template. The following dialog allows you to select a template and a Word document.

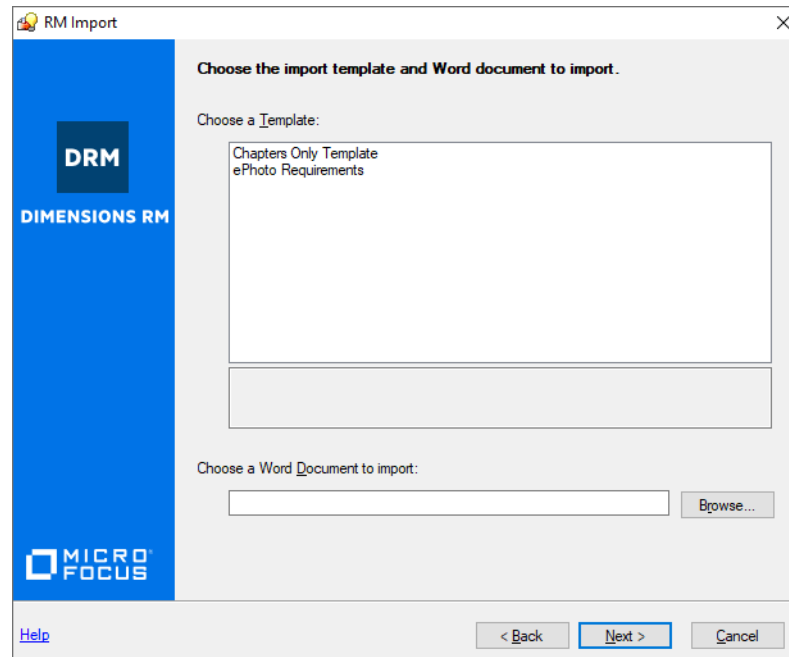


Figure 11-2. Template and Word Document Dialog

To complete the Template and Word Document dialog:

- 1 Choose a Template list** shows all available templates. Select a template you want to use for import.
- 2 Choose a Word Document to import** allows you to enter the path to an existing Word document. Alternatively, you can click on **Browse...** to select the Word document through the *Open file* dialog.
- 3** Clicking **Next >** loads the document and shows the preview screen (see chapter "[Preview Dialog](#)" on page 460).
 - Clicking **< Back** returns the import format selection screen.
 - **Cancel** exits RM Import.

Date Import Formats

RM Import requires the following:

- The Windows server running the Dimensions RM server needs to use the time zone **(UTC) Coordinated Universal Time**. If a different time zone is used, the dates and times in the imported requirement may differ from those in the document from which they were imported.
- The date specified in a Word document must match the format for the attribute of the requirement class you wish to import.

Preview Dialog

After parsing the document, RM Import loads it into the **Preview** dialog. Depending on the size of your Word document, the parsing process can take some time. The **Preview** dialog allows to view and to modify the document before uploading it to Dimensions RM.

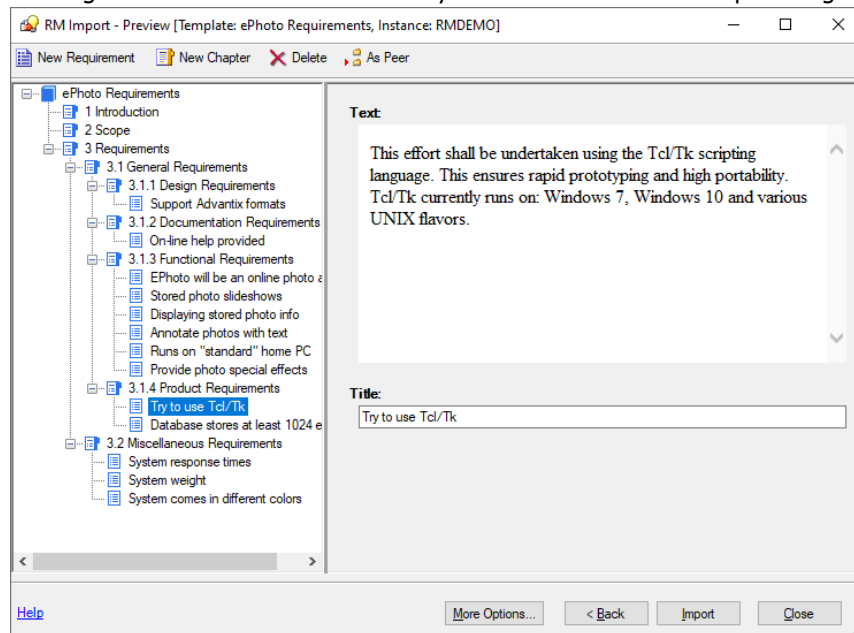


Figure 11-3. Preview Dialog

On the left hand side you find a tree, representing the document chapters and requirements found in the Word document. By using different templates, you might get different parsing results. The document tree uses these icons:



Document This icon represents the document which can contain chapters or requirements.



Chapter This icon represents a chapter which can contain text, tables or images. A chapter can also contain sub-chapters or requirements.



Chapter Import OK This icon shows that the chapter was imported to the Dimensions RM document.



Chapter Import Error This icon shows that an error occurred when importing the chapter to the Dimensions RM document.



Requirement This icon represents a requirement which can contain text, tables or images. A requirement can also contain sub-requirements.



Requirement Import OK This icon shows that the requirement was imported to Dimensions RM.



Requirement Import Error This icon shows that an error occurred when importing the requirement to Dimensions RM.



Resolve Requirement This icon shows that the requirement has invalid attributes.

The Preview dialog also allows to modify a parsed document before importing it to Dimensions RM. To modify a chapter or requirement, select the desired chapter or requirement in the document tree. To use different formatting it is recommended to edit the text in Microsoft Word and paste it into the document).

You can make further modifications by using these functions from the Toolbar:



New Requirement Adds a new requirement to the document. Alternatively, you can add a requirement by right-clicking a chapter or requirement and selecting **New Requirement** from the shortcut menu.



New Chapter Adds a new chapter to the document. Alternatively, you can add a chapter by right-clicking a chapter or requirement and selecting **New Chapter** from the shortcut menu.



Delete Deletes a chapter or requirement from the document. Alternatively, you can delete a chapter or requirement by right-clicking a chapter or requirement and selecting **Delete** from the shortcut menu.



As Peer When adding a chapter or requirement, it is added on the same level as the chapter or requirement which is selected in the document tree.



As Child When adding a chapter or requirement, it is added as a child of the chapter or requirement which is selected in the document tree.

You can access further functions by clicking any of these buttons:

More Options Provides these functions:

- **View Source** Opens the original Word document.
- **Append contents from draft...** Appends the contents of a *Draft Requirements Document* to the current document.
- **Save contents to draft...** Saves the current document as a *Draft Requirements Document*.
- **Import into existing document...** Opens the **Select Document** dialog, which allows you to select an existing Dimensions RM document. Confirming this dialog appends the contents of the current document to the document you selected.

About Opens the **About RM Import** dialog which provides

- Version number and Copyright
- Additional information on the home page of Open Text
- Information about your computer

< Back Returns to the previous dialog (**Select Template and Word Document** or **Select Draft Requirements Document** dialog).

Import Imports the current document to Dimensions RM.

Close Closes RM Import.

To complete the Preview dialog:

- 1 Make the desired modifications
- 2 Click the **Import** button or select Import into existing document... after clicking the **More Options...** button

Draft Requirements Document Import

A **Draft Requirements Document** is a document you created earlier by saving a document from the **Preview** dialog. By using a **Draft Requirements Document** you can continue work at a later time or join two or more documents.

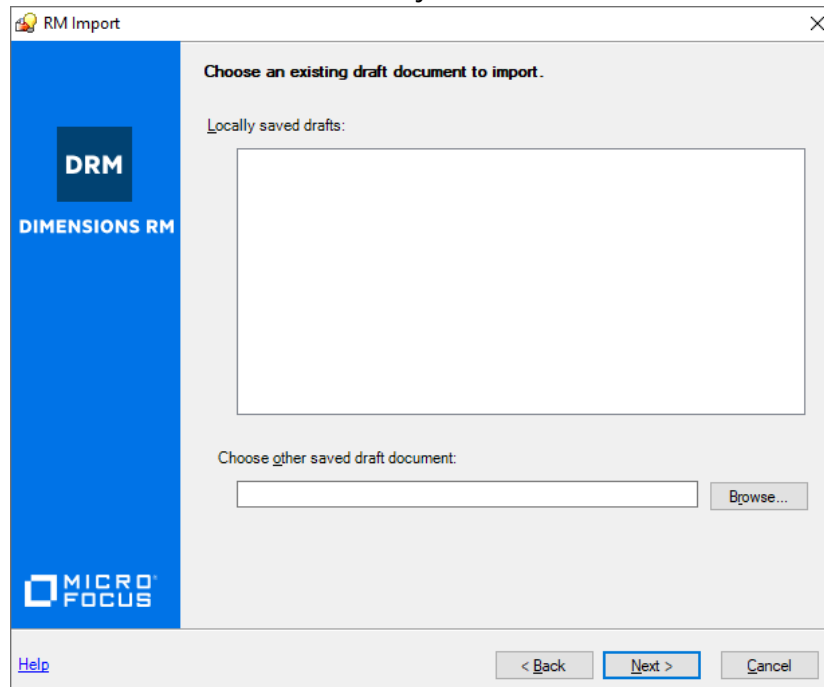


Figure 11-4. Select Draft Requirements Document Dialog

To complete the **Select Draft Requirements Document** dialog:

- 1 Select an entry from the **Locally saved drafts** list. Alternatively, you can enter the path to a Draft Requirements Document into the **Choose other saved draft**

document text box or click the **Browse...** button and navigate to a Draft Requirement Document.

- 2 Clicking **Next >** loads the document and shows the preview screen (see chapter ["Preview Dialog" on page 460](#)).
 - Clicking **< Back** returns the import format selection screen.
 - Clicking **Cancel** exits RM Import.

Excel Import

The Excel Import function of RM Import allows you to import Excel files with .xls and .xlsx file extension. From an Excel file, RM Import can import requirements and documents. At any time, you can use these functions:

- Clicking **< Back** returns the import format selection screen.
- Clicking **Close** exits RM Import.

The following are described in this section:

[Selecting an Excel File](#)

[Mapping Excel Columns to RM Attributes](#)

[Configuring Import Rules](#)

[Importing Excel Documents](#)

Selecting an Excel File

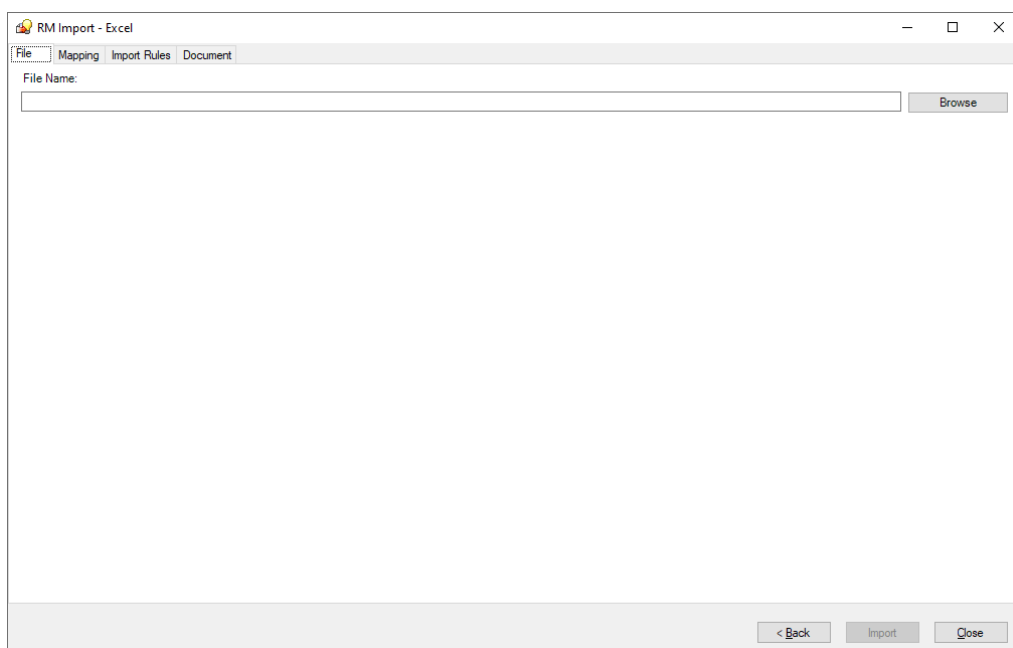


Figure 11-5. Select Excel File Dialog

To select an Excel file, follow these steps:

- 1** Select the **File** tab.
- 2** Click **Browse**.
- 3** Select the Excel file you wish to import.
- 4** Click **Open**.

Mapping Excel Columns to RM Attributes

The **Mapping** tab allows you to assign the columns of an Excel worksheet to the associated Dimensions RM attributes. If your Excel file has several worksheets, you can perform the mapping process for multiple worksheets.

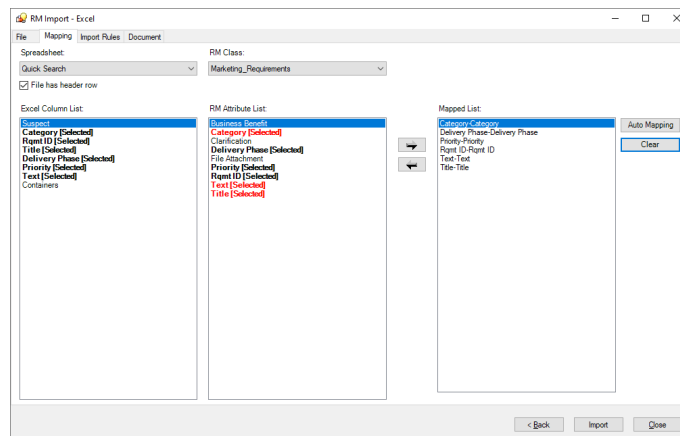


Figure 11-6. Mapping Excel columns to RM Attributes Dialog

The **Mapping** tab contains these functions:

Spreadsheet

The **Spreadsheet** box contains all worksheets of the Excel file.

Select the worksheet you wish to import.

RM Class

The **RM Class** box contains all classes of the Dimensions RM server you logged in to.

Select the class into which you wish to import the requirements. If you want to import a document, the class must be a Chapter class.

File has header row

The **File has header row** box allows to change between Excel column names (A, B, C ...) and the values of the first row (e.g. Tile, Text, Priority).

NOTES

- The **File has header row** box selection is valid for all worksheets. This means that either all worksheets must have header rows or none.
- If the **File has header row** box is selected, the import begins at row 2, skipping the header row.

Excel Column List

Contains the columns of the selected worksheet. Columns which have been mapped appear bold and have the suffix **[Selected]**.

RM Attribute List

Contains the attribute names of the selected Dimensions RM class. Attributes that are mandatory, are marked red. Attributes which have been mapped appear bold and have the suffix **[Selected]**.

Mapped List

Contains the mapped Excel columns and attributes.

Adds a mapping to the **Mapped List** box.

To add a mapping, select one entry in the **Excel Column List** box and one entry in the **RM Attribute List** box.



Removes the selected mapping from the **Mapped List** box.

Auto Mapping

Maps all entries with identical names in **Excel Column List** box and **RM Attribute List** box.

Clear

Clears all mappings.

Configuring Import Rules

The **Import Rules** tab allows you to define where the import should start and end and how to identify requirements to import and how to identify existing requirements. The import rules are defined independently for each mapping.

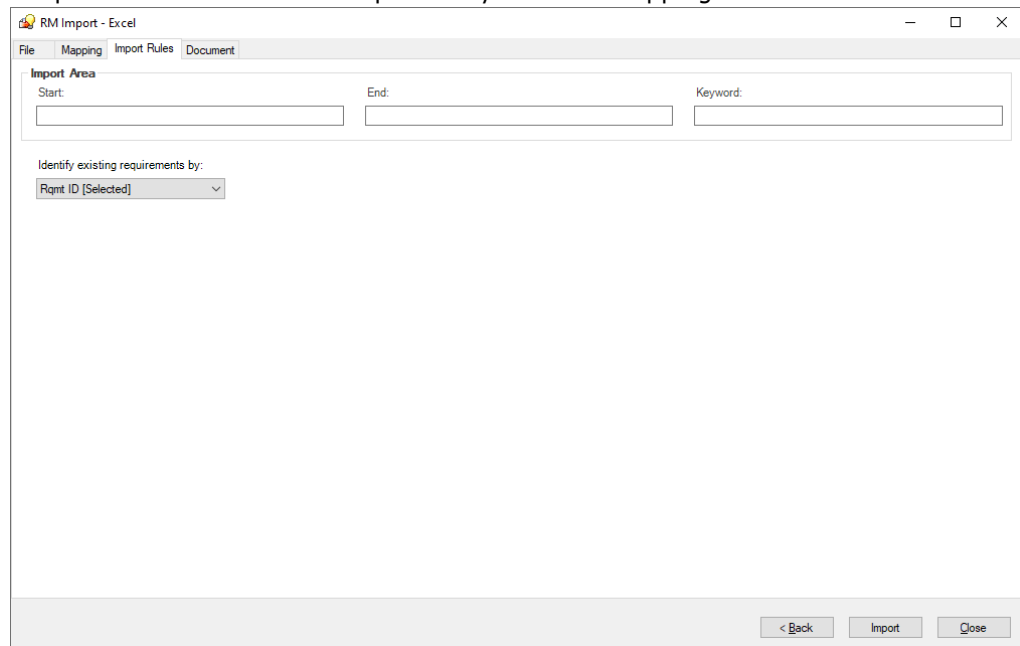


Figure 11-7. Import Rules Dialog

The **Import Rules** tab provides these functions:

Start



The identifier which defines where to start import. The requirement following the **Start** identifier is the first requirement to be imported.

TIP Place the **Start** identifier on a separate line before the first requirement you wish to import.

End



The identifier which defines where to stop import. The requirement which precedes the **End** identifier is the last requirement to be imported.

TIP Place the **End** identifier on a separate line after the last requirement you wish to import.

Keyword

The keyword defines which requirement should be imported. Note that RM Import imports the requirement if the keyword is found in any column of that requirement.

Identify existing requirements by

By selecting the attribute from the list, RM Import can check if the requirement in the list already exists. If an attribute is selected, existing requirements will be replaced and nonexisting requirements will be added. If no attribute is selected, all requirements will be added.

Configuring Document Settings

The **Document** tab allows to create a new document or to replace an existing document. The document settings are defined independently for each mapping. Note that for importing a document, you need to map a Chapter class.

RM Import - Excel

File Mapping Import Rules Document

☒ Import into RM document

☒ Create Document ☐ Replace Document

Name:

* Test Document

Description:

Figure 11-8. Document Settings Dialog

To import a document, follow these steps:

- 1 Select the **Import into RM document** box.
- 2 Select **Create Document** and enter a name for the document into the **Name** box to import the requirements into a new document.
Select **Replace Document** and select a document from the **Name** box to import the requirements into the selected document.
- 3 In the **Sequence Number** box, select the Excel column which contains the sequence number. The sequence number specifies the order in which the requirements should be added to each chapter.
- 4 In the **Chapter Title** box, select the Excel column which contains the chapter title. If you do not select the chapter title, the chapters will not be created.

In addition, you can do any of the following:

- Enter a document foreword into the **Description** box.
- In the **Chapter Description** box, select the column which contains the description for the chapter.

Importing Excel Documents

To import the requirements or documents, click **Import**. The **Import** button is only available if all necessary settings have been made. During import, RM Import shows a progress dialog. Note that the import cannot be canceled once it started. After import is

complete, RM Import opens a report to show which requirements or chapters have been imported.

Configuring RM Import

The administrator can configure RM Import by modifying its configuration file. The configuration file is in the same directory as RM Import and has the name `RmImport.exe.config`. The configuration file is an XML file and thus you can open it with a text editor (e.g. Notepad).

Configuring the Security Protocol

RM Import supports these protocols for connecting to the web service:

Protocol	Setting
SSL 3	SSL3
TLS 1.0	TLS
TLS 1.1	TLS11
TLS 1.2	TLS12



NOTE For TLS 1.1 and TLS 1.2, **.NET 4.5** or higher must be installed on the machine running RM Import.

You can choose any combination of the supported protocols by combining the settings with the pipe symbol, e.g. `SSL3|TLS`.

To configure the security protocol, do the following:

- 1 Open the file `RM_Install\RM\bin\RmImport.exe.config` in a text editor, e.g. Notepad.



NOTE Depending on the access rights for the containing directory and operating system configuration, you may have to start the text editor as an administrator and then browse to the file location.

- 2 Locate the following text:
<setting name="SecurityProtocol" serializeAs="String">.
- 3 Locate the related **<value>** tag.
- 4 Replace the text between **<value>** and **</value>** with the protocols you want to enable.
Examples:

Supported Protocols	Setting
SSL 3 and TLS 1.0	SSL3 TLS
TLS 1.0 only	TLS
TLS 1.1 and TLS 1.2	TLS11 TLS12

Supported Protocols	Setting
TLS 1.2 only	TLS12
Any protocol	SSL3 TLS TLS11 TLS12

The security protocol setting should look like this for supporting any protocol:

```
<setting name="SecurityProtocol" serializeAs="String">  
<value>SSL3|TLS|TLS11|TLS12</value>  
</setting>
```

- 5 Save the file.
- 6 Restart RM Import if it is already running.

RM Import Designer

RM Import Designer allows users to define templates that can be used and reused, when importing Microsoft® Word documents into Dimensions RM. Templates define how to identify classes, attributes, chapters, requirements, and categories. Templates can be saved to the database for future use.

The RM Import tool allows users to preview a Word document, change the description of chapters, reorganize the chapters, change the values of attributes, move attributes between chapters, and so on. When satisfied with the document, users can import it into Dimensions RM as a document that can be viewed and edited from Document View.

For more information about RM Import, see ["Logging into RM Import" on page 456](#). For more information about Document View, see

Logging into RM Import Designer

Logging in to RM Import Designer is identical to the login for RM Import, in fact, they share a code base.

The login is a two-part process:

- Validating the connection to the server
- Logging in to the Dimensions RM instance

The server validation must occur before you can log in to a Dimensions RM instance. If you are using secure socket layers (SSL), a certificate selection dialog may be displayed during the server validation.

Prior to login you must know the URL of the Dimensions RM server running the web service, for example: <https://dimensionsrm.com/rtmBrowser/WebServices>

- 1 To log in to RM Import Designer, perform one of the following:
 - **From the Start menu** select **RM Import Designer** or
 - **Double-click the RM Import Designer shortcut** on your desktop.
- 2 The **RM Import Designer login** dialog box opens.

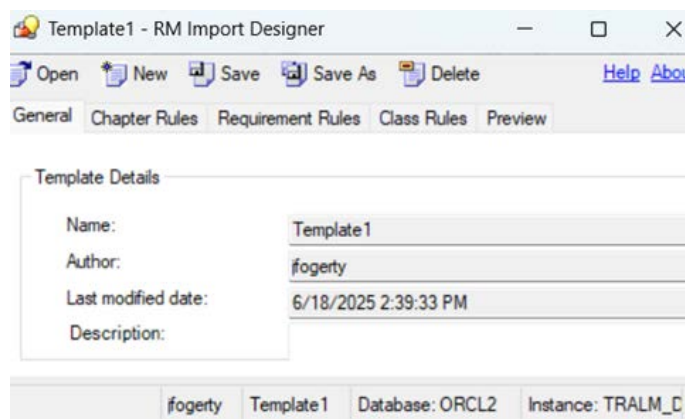


Figure 11-9. Login Dialog

- a** In the **Server** field, type the name of the server that hosts the RM Web service.

An example URL is `https://MyRM.com:8080/rtmBrowser/WebServices`

Note: It is a good practice to copy the complete URL that is in the **Server** field to the address bar of a Web browser window and test that it connects to the RM Server. This is a good test for http and https to validate that the Web service is up and running.

- b** Once the Server field is populated, click into the User Name field to connect to the server.
- c** In the **Password** field, type your password.
- d** In the **Database** field, select the Dimensions RM database into which you want to import data.
- e** In the **Instance** field, select the instance name.

The instances listed are those that you have permission to log in to. If no instances appear in the list, then either an error occurred with the connection or you do not have permissions for any instance on the server.

- f** Click **OK**. This opens the Import File Format dialog.

RM Import Designer Functions

The following sections describe how to perform the functions available on the RM Import Designer toolbar.

[Opening an Existing Template](#)

[Creating a New Template](#)

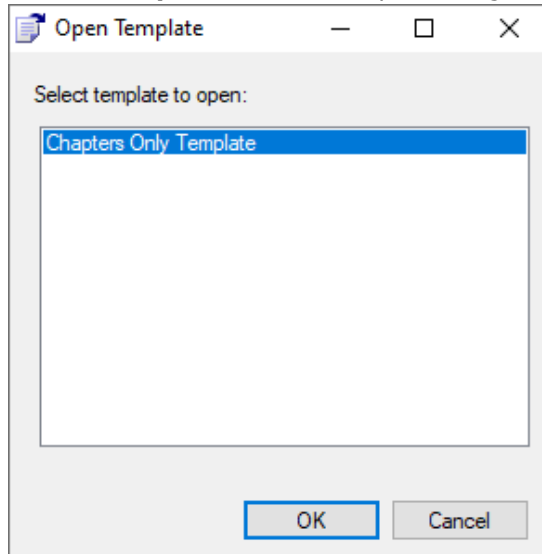
[Saving a Template](#)

[Deleting a Template](#)

Opening an Existing Template

If there are existing templates to be accessed they will be listed on the "Select Template to open" dialog. The "Chapters Only Template" is a default.

- 1 Click **Open** on the RM Import Designer toolbar.



- 2 If available, select the template you would like to open, and click OK, otherwise click **Cancel**.
- 3 To create a new template: [Creating a New Template](#)

Creating a New Template

To create a new template:

- 1 Click **New** on the RM Import Designer toolbar.
Templates are numbered, by default, users may assign more meaningful names. When choosing '**New**' a numbered template is created. The number of the template in the title bar and in the **Name** field is incremented by one.
- 2 Complete the tabs in RM Import Designer as described in this chapter.
- 3 Click **Save** on the RM Import Designer toolbar.

Saving a Template

The template may be saved using the current name by clicking the **Save** button.

To save a template with another name:

- 1 Click **Save As** on the RM Import Designer toolbar.

The **Save As** dialog opens.

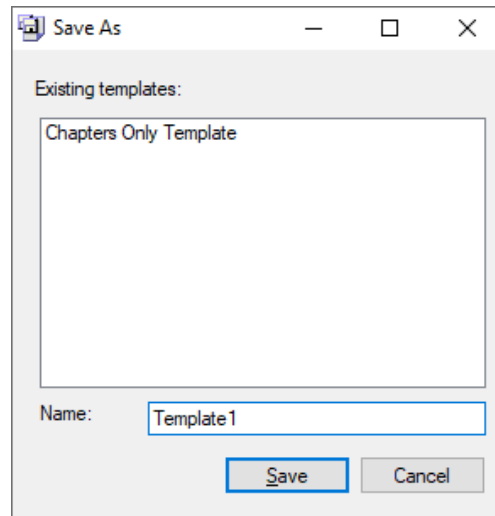


Figure 11-10. Save As Template Name

- 2 To save this template with another name, type the name in the **Name** field.
- 3 Click **Save**.

Deleting a Template

To delete a template:

- 1 Open the template you want to delete.
- 2 Click **Delete** on the RM Import Designer toolbar.
- 3 Confirm the deletion in the confirmation dialog box that opens.

RM Import Designer Tabs

The following Tabs are documented in this Section:

[General Tab](#)

[Chapter Rules Tab](#)

[Requirement Rules Tab](#)

[Class Rules Tab](#)

General Tab

After you log in to RM Import Designer, the **RM Import Designer** dialog box opens to the **General** tab.

To complete the General tab:

- 1 **Name** is a read-only field that contains the name of the template. When you create the template, the name is Template<*n*>, where <*n*> is the next numbered template. You can change the name by clicking **Save As** and typing a new file name.

- 2 Author** is a read-only field that contains the user name of the person who created the template. If this is a new template, this field contains the user name of the person who just logged in to RM Import Designer.
- 3 Last modified date** is a read-only field that contains the date and time that the template was created or saved. For a template that has not yet been saved, this field contains the date and time that the user logged in.
- 4** In the **Description** field, type an optional description of the template. Any description you type in this field is displayed in import mode, and helps the user determine which template to select for the import.

Chapter Rules Tab

The **Chapter Rules** tab gives you choices for identifying chapters. Chapters are captured automatically according to Word headings, similar to the way Word builds a table of contents. The automatic capture of headings as chapters helps maintain the structure and organization of documents.

Standard and Custom Headings:

By default, all headings are captured as chapters. If the [Requirement Rules Tab](#) identify these selected headings as requirements, then the requirement rules take precedence and the headings and subheadings are identified as requirements.

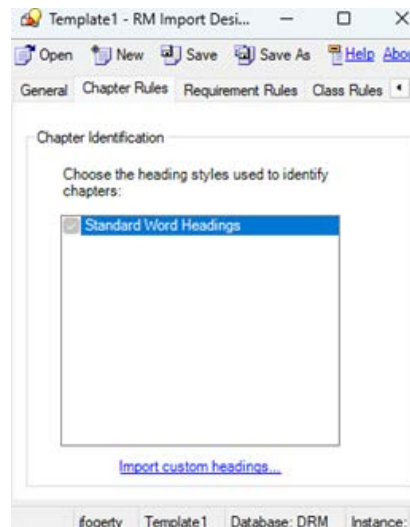


Figure 11-11. Chapter Rules Tab

If the document you are importing uses custom headings (headings other than the standard nine Word headings), you can use *Import Custom Headings* to capture the headings from the document. The same list of custom headings are presented on the **Requirement Rules** tab.

To use custom headings in addition to standard Word headings:

- 1** Click **Import custom headings**. The **Open** dialog box opens.
- 2** Type or browse to the Word document from which you want to load heading styles, and click **Open**.

The custom headings from the document are displayed in the list box.

- 3 Select the custom headings that must be used to identify chapters.

Requirement Rules Tab

The **Requirement Rules** tab is used to identify the requirements in the document, and varies depending on the option you select under **Requirement Identification**. Each option presents a pattern in which requirements can be identified. The option you select affects the attribute patterns available on the **Class Rules** tab.



NOTES

- Use the **Preview** tab to see how each option affects the import.

The Table Option

The choices presented with the **Table** option allow you to distinguish rows in tables that contain requirements from those that do not. Use the **Table** option if requirements are managed in table rows.

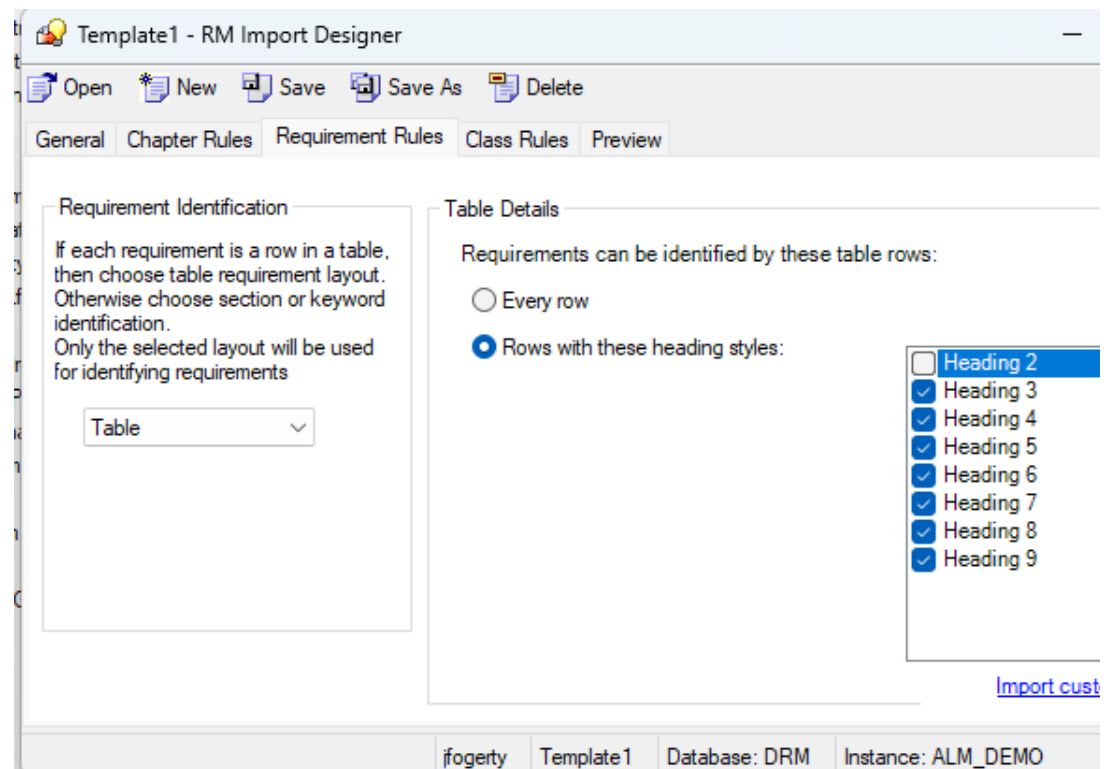


Figure 11-12. Requirement Rules Tab—Table Layout

To complete the Requirement Rules tab for the Table option:

- 1 Under **Requirement Identification**, select **Table**.

- 2 Under **Table Details**, select one of the options described in the following table.

Option	Description
Every row	Select this option for documents in which all tables contain requirements.
Rows with these heading styles	Select this option when a requirement is in a table with a table cell containing a standard Word heading style. Tables that do not contain a heading are not identified as containing requirements and become part of the chapter description. If you want to use custom headings, click Import custom headings, and type to or browse to the Word document from which you want to load custom styles. Select those headings that you want to use to identify requirements. NOTE: If you imported custom headings on the Chapter Rules tab, this list is automatically populated with the headings from the document you specified there.

- 3 Select the **Ignore header rows in a table** check box if the table contains a header row (that is, the first row in the table contains the names of columns and not a requirement).

The Section Option

Use the **Section** option to identify sections of the Word document that contain requirements.

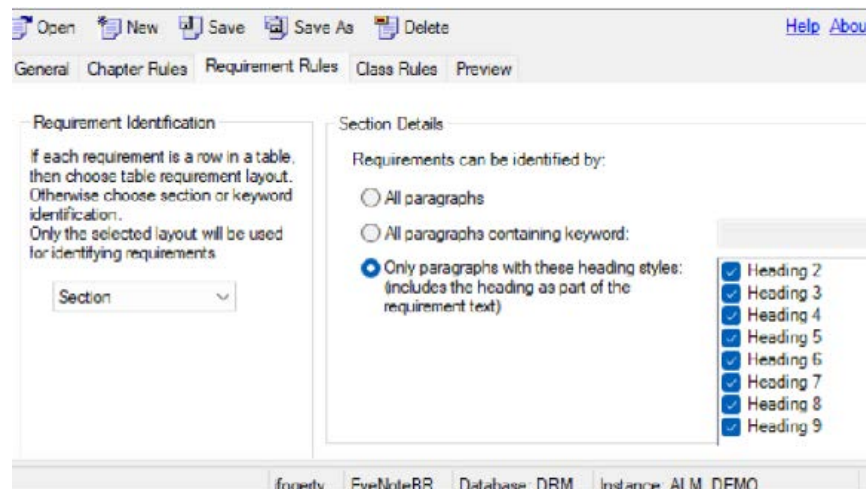


Figure 11-13. Requirement Tab—Section Option

To complete the Requirement Rules tab for the Section option:

- 1 Under **Requirement Identification**, select **Section**.

- 2 Under **Section Details**, select one of the options described in the following table.

Option	Description
All paragraphs	Select this option to identify every paragraph in a chapter as a requirement. This option is useful for numbered lists, bulleted lists, and so on.
All paragraphs containing keyword	Select this option to identify every paragraph in the chapter as a requirement only if it contains the keyword or keywords you type in the field. <i>Shall</i>, <i>will</i>, and <i>must</i> are examples of keywords you could type here. You can also type regular Word expressions in this field. For examples of regular Word expressions, see "Word Regular Expressions" on page 492. NOTE: When there is information between two paragraphs that contain keywords, that information is captured into the first requirement. To perform an OR search, separate multiple keywords with spaces. If you want to search for an exact string, enclose multiple keywords in quotation marks. To perform a customized search, use a regular expression.
Only paragraphs with these heading styles...	Select this option to identify any block of text with a specific heading style as a requirement. The heading is included as part of the requirement. If you want to include custom headings, click Load custom headings and type or browse to the Word document from which you want to load custom styles. Select those headings that you want to use to identify requirements. NOTE: If you imported custom headings on the Chapter Rules tab, this list is automatically populated with the headings from the document you specified there.

The Keyword Option

If requirements cannot be identified using the table or section rules, you can specify a pattern using a keyword or Word regular expression that identifies requirements. The pattern can span paragraphs and the first match of the "begin pattern" keyword represents the beginning of the requirement. You can identify an entire table representing a requirement using this option.

ePhoto Requirements - RM Import Designer

Open New Save Save As Delete

General Chapter Rules **Requirement Rules** Class Rules Preview

Requirement Identification

If each requirement is a row in a table, then choose table requirement layout. Otherwise choose section or keyword identification. Only the selected layout will be used for identifying requirements

Keyword

Keyword Details

Requirements can be identified by:

Begin Pattern

Keyword: REQ_START

☒ Include keyword as part of requirement text

End Pattern

☒ Keyword: REQ_END

☐ Include keyword as part of requirement text

☐ End of table

☐ Include entire table as part of requirement text

Figure 11-14. Requirement Tab—Keyword Option

To complete the Requirement Rules tab for the Keyword option:

- 1 Under **Requirement Identification**, select **Keyword**.
 - Keywords are case sensitive. To search for either case, type both words in the **Keyword** box, separated by a space. For example, type **design Design**.
 - To perform a customized search, use a regular expression. For information about regular expressions, see ["Word Regular Expressions" on page 492](#).
- 2 Under **Begin Pattern**, type the keyword or keywords or Word regular expression that marks the beginning of the requirement. If you want to include the keyword as part of the requirement, select the **Include keyword as part of requirement text** check box.

This field is mandatory.
- 3 Under **End Pattern**, do one of the following:
 - Select **Keyword** and type the keyword or keywords or Word regular expression that marks the end of the requirement. If you want to include the keyword as part of the requirement, select the **Include keyword as part of requirement text** check box.
 - Select **End of table** if the beginning keyword is before the table and the entire table after the beginning keyword represents a requirement. If you want to include the entire table as part of the requirement, select the **Include entire table as part of requirement text** check box.

Class Rules Tab

The **Class Rules** tab allows you to identify classes in a document and set up default attributes and categories. By default, the title and description attributes and other attributes that are specified as "mandatory" in Class Definition are included in each class.

RM Import attempts to capture everything that is not a requirement as the chapter description. It attempts to capture portions of a requirement that are not captured into any attribute into the default Description attribute of that class.



CAUTION! If you do not enable HTML formatting for the default Description attribute or any other text attribute, then formatting and images are not imported. For instructions for enabling HTML for text attributes, see ["Text Attribute" on page 552](#).



CAUTION! If you delete a class that is referenced in a template from Class Definition, or remove "read" permission for it, the template becomes invalid.



NOTE If the entire requirement can be captured into the default Description attribute, then you do not have to make any additional choices on the **Class Rules** tab.

Class Information



NOTE A red exclamation mark indicates that a mandatory default value must be specified.

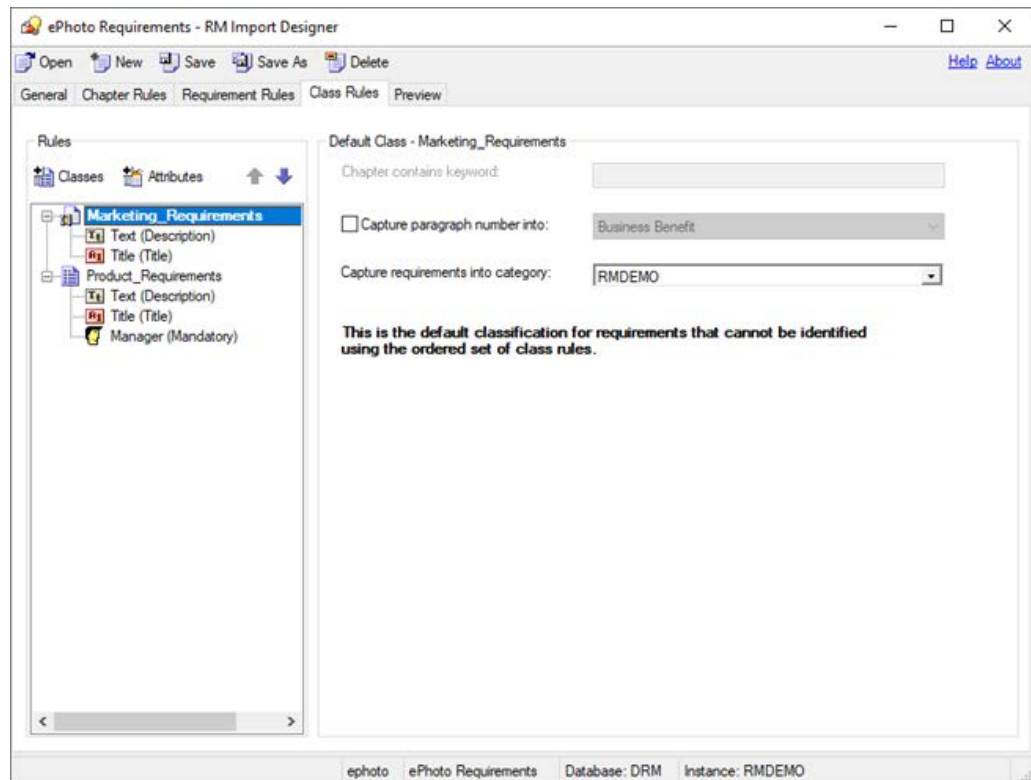


Figure 11-15. Class Rules Tab—Default Class

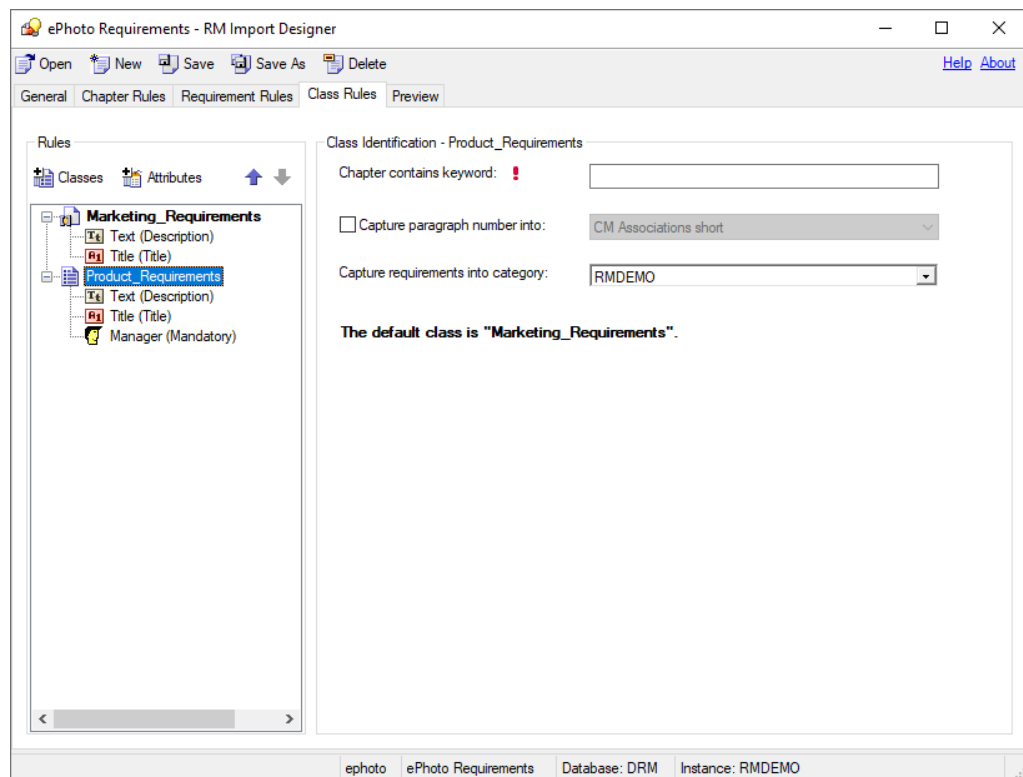


Figure 11-16. Class Rules Tab—Non-Default Class

To complete the Class Rules tab for a class:

- 1 Do one of the following:
 - If you are creating a new template, the **Add/Remove Class Rules** dialog box automatically opens when you click the **Class Rules** tab. Proceed to the next step.
 - If you need to change the classes that are included in an existing template, click **Classes**, or right-click in the left pane and select **Add/Remove Classes**.

The **Add/Remove Class Rules** dialog box opens.

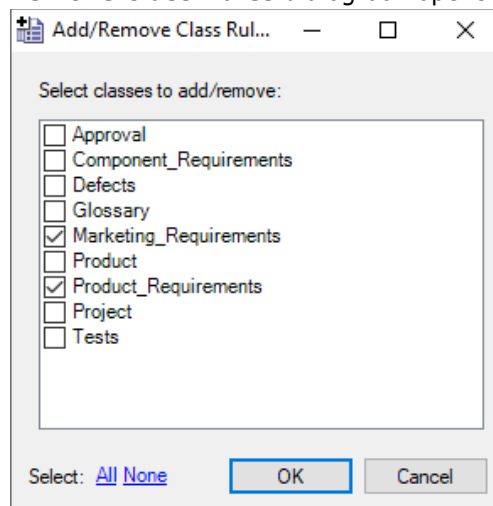


Figure 11-17. Add/Remove Class Rules

- 2 A set of class types that are defined for the instance are listed. Select the classes into which you want to import requirements and click **OK**. To select all of the classes, click **All** at the bottom of the dialog box and click **OK**.
- 3 By default, the first class listed in the **Add/Remove Class Rules** dialog box becomes the default class for all requirements, and is displayed in boldface type. To change the default class, select the class you want as the default class, right-click in the left pane, and click **Mark as default**.



NOTE You can define only one default class for each template.

- 4 To remove a class, click the **Classes** button, or right-click in the left pane and select **Add/Remove Classes**. In the **Add/Remove Class Rules** dialog box that opens, clear the check box for the class and click **OK**.

Alternatively, you can right-click the class in the left pane and click **Remove**.

- 5 Each chapter that contains requirements is searched for keywords. In the **Chapter contains keyword** box, type the keyword or Word regular expression that identifies the class. If there is a match, then requirements found in the chapter are imported as requirements of that class.

This is important when multiple classes can be identified from the document. The keywords are searched in the order in which the classes are specified in the **Add/Remove Class Rules** dialog. To reorder the classes, select the class and then click the up or down arrow in the left pane.



NOTES

- The **Chapter contains keyword** field is disabled for the default class, because all requirements found in the document are of the same class.
- To perform a customized search, use a regular expression. For information about regular expressions, see ["Word Regular Expressions" on page 492](#).

- 6 If you want to import the paragraph ID (for example, 5.3.2) into an attribute, select the **Capture Paragraph Number into** check box and select the attribute from the list.
- 7 Select the category to which the requirement will belong from the **Capture requirements into category** list. The default is the root category (the instance). The category that you select respects the category permissions for the user.

Attribute Information

When a class in the left pane is expanded, you can select an attribute and specify how the attributes within a requirement are identified, specify default values, and so on. The information in the right pane varies depending on the **Requirement Identification** option selected on the **Requirement Rules** tab, and the type of attribute that is selected. The option that was selected on the **Requirements Rules** tab is displayed at the top of the **Class Rules** tab when an attribute is selected in the left pane.

Items to Note before adding attribute content:

- If an attribute referenced in a template is deleted from the class, the template becomes invalid.
- A red exclamation mark indicates that an attribute is mandatory, a default value should be specified to keep the import from failing if the attribute is missing from a requirement.
- The title and description attributes are often mandatory and, therefore, require default values.
- The same region within a requirement can be captured into multiple attributes. For example, the third column in a table can be captured into more than one attribute.

The following are described in this section:

[Adding and Removing Attributes](#)

[Alphanumeric Attributes with Section or Keyword Option](#)

[Alphanumeric Attributes with Table Option](#)

[Text or Numeric Attributes with Section or Keyword Option](#)

[List or User Attributes with Section or Keyword Option](#)

[List or User Attributes with Table Option](#)

Adding and Removing Attributes

To add and remove attributes from a class:

- 1 Select the class to which you want to add attributes.
- 2 Click **Attributes**, or right-click in the left pane and click **Add/Remove Attributes**.

The **Add/Remove Attributes** dialog box opens. All of the attributes that are defined for the class are listed.

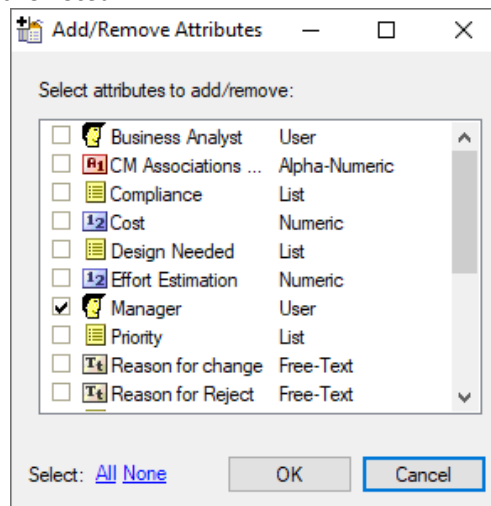


Figure 11-18. Add/Remove Attributes

- 3 Select the attributes that you want to add and click **OK**. To select all attributes, click **All** at the bottom of the dialog box and click **OK**.
- 4 To remove an attribute, click **Attributes**, or right-click the attribute in the left pane and click **Add/Remove Attributes**. In the **Add/Remove Attributes** dialog box that

opens, clear the attribute check box and click **OK**. To remove all attributes, click **None** at the bottom of the dialog box and click **OK**.



NOTE Default and mandatory attributes for the selected class are always selected and cannot be removed.

Alphanumeric Attributes with Section or Keyword Option

The following illustration shows the **Class Rules** tab for alphanumeric attributes with the Section or Keyword option:

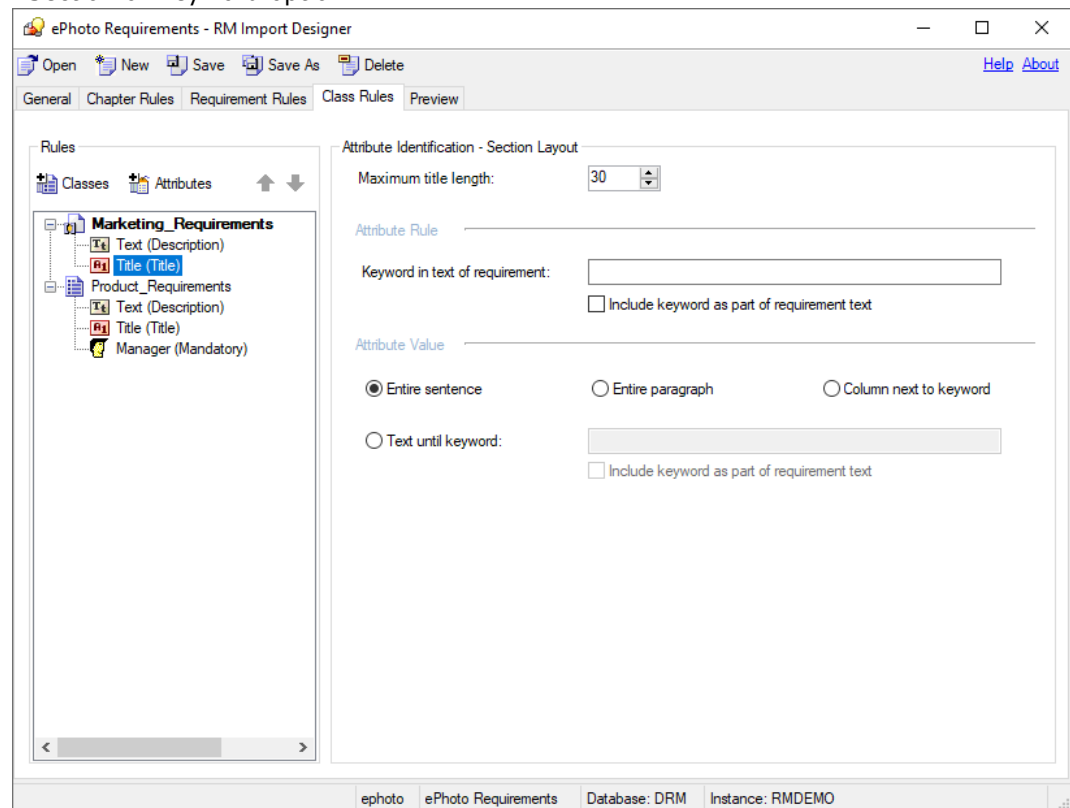


Figure 11-19. Class Rules Tab—Section or Keyword Option—Alphanumeric Attributes

To complete the Class Rules tab for alphanumeric attributes with the Section or Keyword option:

- 1 In the **Maximum title length** field, select the number of characters for the attribute title. The default value is **30**.
- 2 In the **Keyword in text of requirement** field, type the keyword, keywords, or Word regular expression to identify the attribute. If you want to include the keyword as part of the requirement, select the **Include keyword as part of requirement text** check box. If no rule is specified in this field, by default the first 30 characters are captured as the title.



NOTE To perform a customized search, use a regular expression. For information about regular expressions, see ["Word Regular Expressions" on page 492](#).

- 3 Under **Attribute Value**, specify one of the options described in the following table:

Option	Description
Entire sentence	The entire sentence in which the keyword is found is the attribute value.
Entire paragraph	The entire paragraph in which the keyword is found is the attribute value.
Column next to keyword	The requirement includes a table, and the entire content of the cell to the right of the first cell containing the keyword is the attribute value. When the cell that contains the keyword is the last cell in a row, the content of the first cell in the next row is the attribute value. NOTE: This does not pertain to the Table option.
Text until keyword	The text up to the specified keyword is the attribute value. Select the Include keyword as part of requirement check box if you want to include the keyword in the attribute value. The default is to exclude the keyword.

Alphanumeric Attributes with Table Option

The following illustration shows the Class Rules tab for alphanumeric attributes with the Table option:

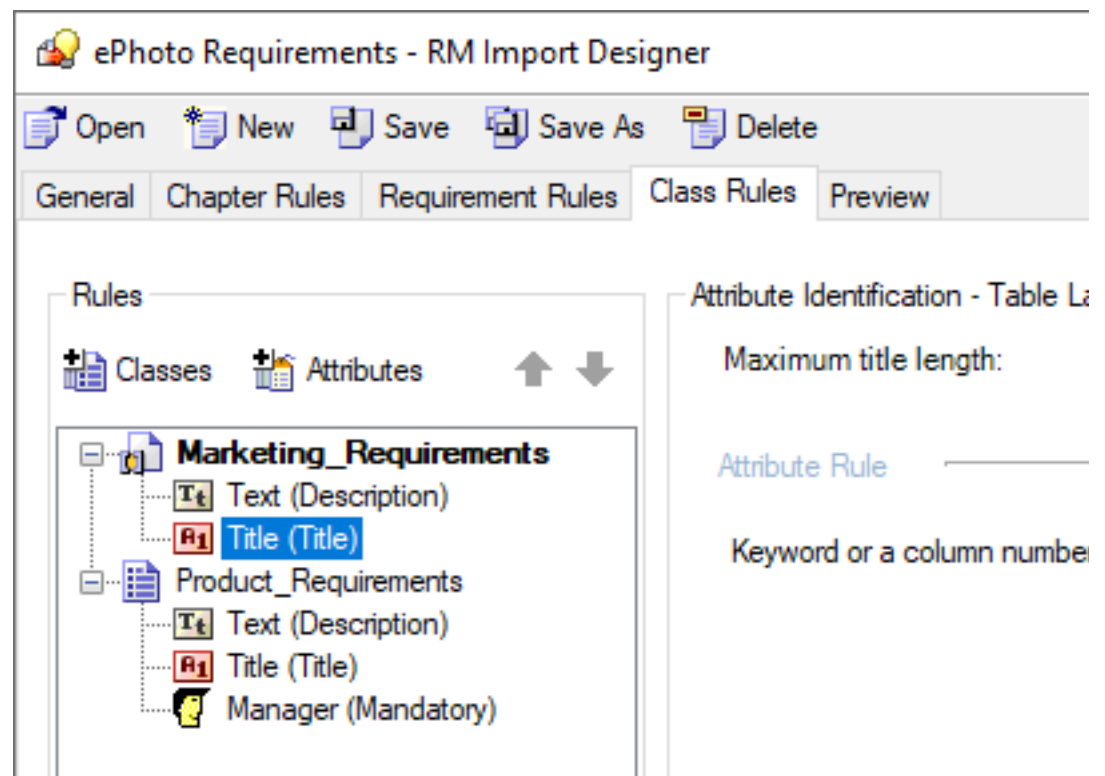


Figure 11-20. Class Rules Tab—Table Option—Alphanumeric Attributes

To complete the Class Rules tab for alphanumeric attributes with the Table option:

- 1 In the **Maximum title length** field, select the number of characters for the attribute title. The default value is **30**.
- 2 In the **Keyword or column number field**, type the keyword or column number to identify the attribute. For example, if the **Priority** attribute is in the third column, you could specify 3. The information specified in the cell below the column heading represents the value of the attribute (for example, High). If no rule is specified in this field, by default the first 30 characters are captured as the title.

Text or Numeric Attributes with Section or Keyword Option

The following illustration shows the **Class Rules** tab for text or numeric attributes with the Section or Keyword option:

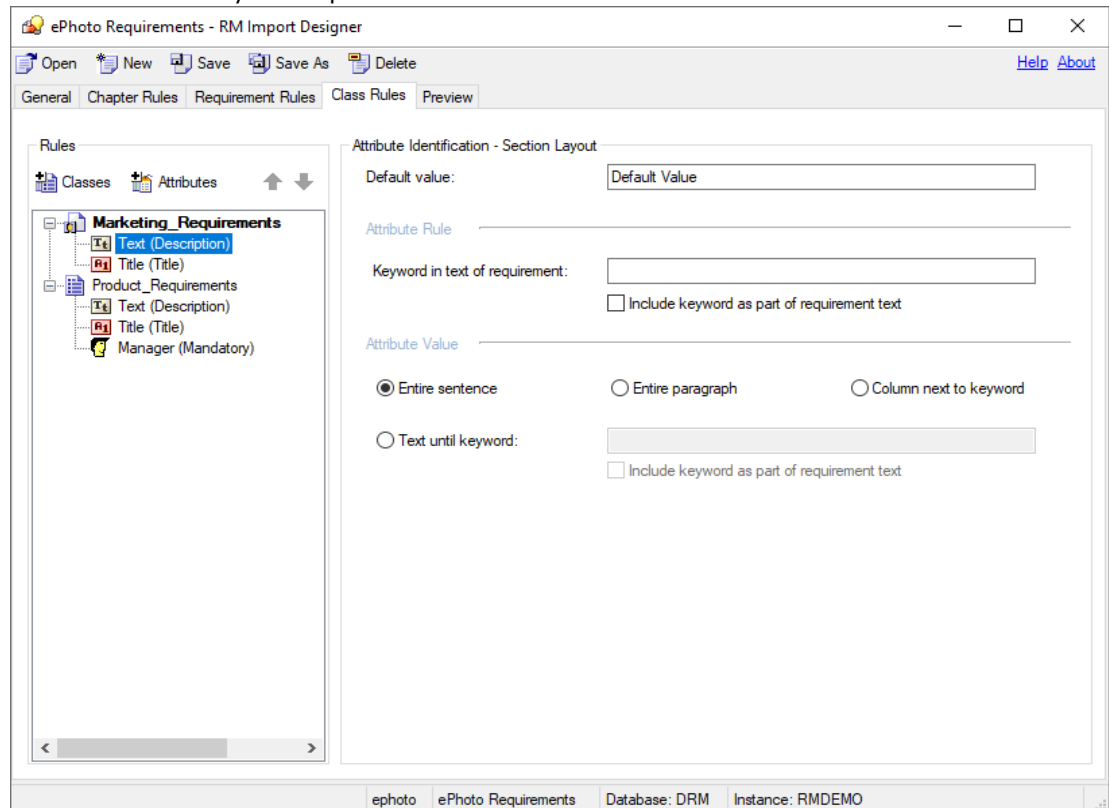


Figure 11-21. Class Rules Tab—Section or Keyword Option—Text or Numeric Attributes

To complete the Class Rules tab for text or numeric attributes with the Section or Keyword option:

- 1 In the **Default value** field, type a default value for the attribute value if the attribute value cannot be found in the document. For numeric attributes, you must enter a number. This field must be filled in for mandatory attributes.

For example, for the **Owner** attribute, you could set the default value to the name of the team lead for the instance.

- 2 In the **Keyword in text of requirement** field, type the keyword, keywords, or Word regular expression to identify the attribute. If you want to include the keyword as part of the requirement, select the **Include keyword** check box.



NOTE To perform a customized search, use a regular expression. For information about regular expressions, see ["Word Regular Expressions" on page 492](#).

- 3 Under **Attribute Value**, specify one of the options described in the following table:

Option	Description
Entire sentence	The entire sentence in which the keyword is found is the attribute value.
Entire paragraph	The entire paragraph in which the keyword is found is the attribute value.
Column next to keyword	The requirement includes a table, and the entire content of the cell to the right of the first cell containing the keyword is the attribute value. When the cell that contains the keyword is the last cell in a row, the content of the first cell in the next row is the attribute value. NOTE: This does not pertain to the Table option.
Text until keyword	The text up to the specified keyword is the attribute value. Select the Include keyword check box if you want to include the keyword in the attribute value. The default is to exclude the keyword.



NOTE If you do not choose an **Attribute Value** option, the attribute value is the text following the keyword until the next keyword is found or the end of the chapter or document is reached.

Text or Numeric Attributes with Table Option

The following illustration shows the **Class Rules** tab for text or numeric attributes with the Table option:

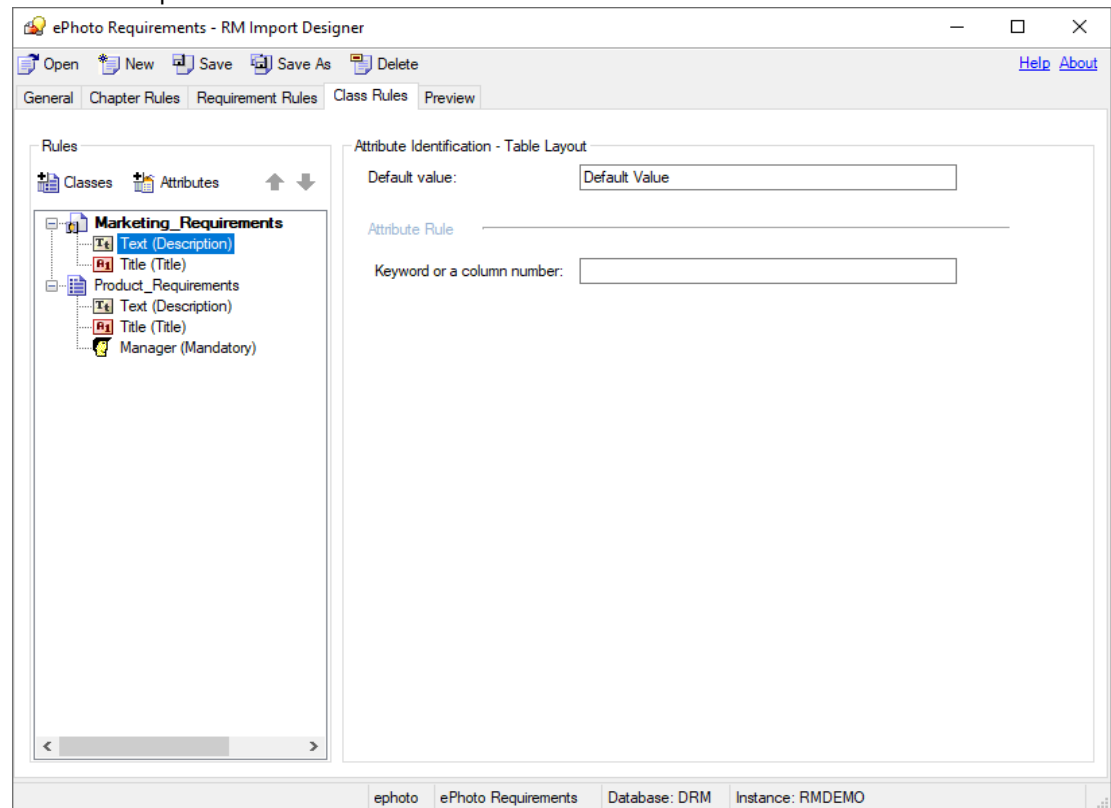


Figure 11-22. Class Rules Tab—Table Layout—Text or Numeric Attributes

To complete the Class Rules tab for text or numeric attributes with the Table option:

- 1 In the **Default value** field, type a default value for the attribute value if the attribute value cannot be found in the document. For numeric attributes, you must enter a number. This field must be filled in for mandatory attributes.

For example, for the **Priority** attribute, you could set the default value to Low.



NOTE A red exclamation mark indicates that a mandatory default value must be specified. The title and description attributes always require default values, as well as attributes that are marked as mandatory in Class Definition.

- 2 In the **Keyword or a column number** field, type the keyword or column number to identify the attribute. For example, if the **Priority** attribute is in the third column, you could specify 3. The information specified in the cell below the column heading represents the value of the attribute (for example, High).



NOTE To perform a customized search, use a regular expression. For information about regular expressions, see ["Word Regular Expressions" on page 492](#).

List or User Attributes with Section or Keyword Option

The following illustration shows the **Class Rules** tab for list or user attributes with the Section or Keyword option:

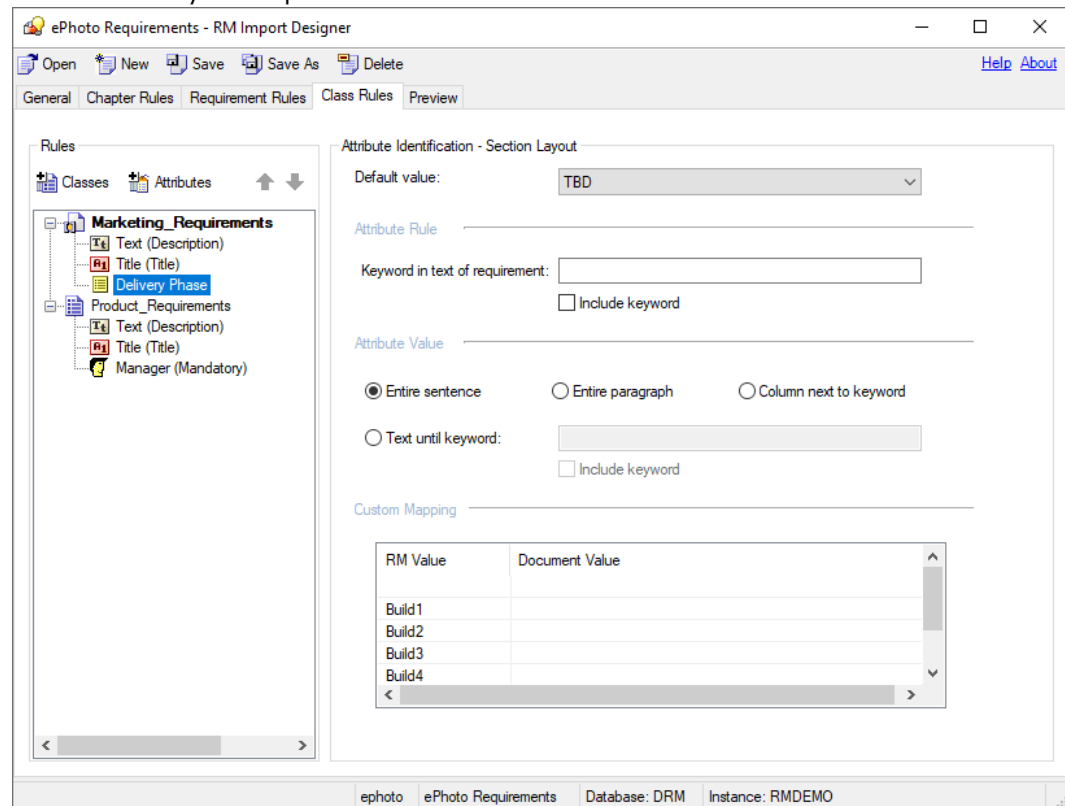


Figure 11-23. Class Tab—Section or Keyword Layout—List or User Attributes

To complete the Class tab for list or user attributes with a Section or Keyword layout:

- 1 In the **Default Value** field, select the default value for the attribute if the attribute value cannot be found in the document. For example, for a **Delivery Phase** attribute, you could select TBD (To Be Determined).
- 2 In the **Keyword in text of requirement** field, type the keyword, keywords, or Word regular expression to identify the attribute. If you want to include the keyword as part of the requirement, select the **Include keyword** check box. The **Keyword in text of requirement** field must be filled in for mandatory attributes.



NOTES

- A red exclamation mark indicates that a mandatory keyword must be specified.
- To perform a customized search, use a regular expression. For information about regular expressions, see ["Word Regular Expressions" on page 492](#).

- 3 Under **Attribute Value**, specify one of the options described in the following table:

Option	Description
Entire sentence	The entire sentence in which the keyword is found is the attribute value.
Entire paragraph	The entire paragraph in which the keyword is found is the attribute value.
Column next to keyword	The requirement includes a table, and the entire content of the cell to the right of the first cell containing the keyword is the attribute value. When the cell that contains the keyword is the last cell in a row, the content of the first cell in the next row is the attribute value. NOTE: This does not pertain to the Table option.
Text until keyword	The text up to the specified keyword is the attribute value. Select the Include keyword check box if you want to include the keyword in the attribute value. The default is to exclude the keyword.

- 4 If you want to map values from the document to the actual values in the Dimensions RM database, under **Custom Mapping**, enter the values under **Document Value**. Separate multiple values with commas. If you map values, the Dimensions RM values appear in the imported document instead of the document values. For example, *Build 3* is the value in the Dimensions RM database, but *Alpha* is the corresponding value in the document.

List or User Attributes with Table Option

The following illustration shows the **Class Rules** tab for list or user attributes with the Table option:

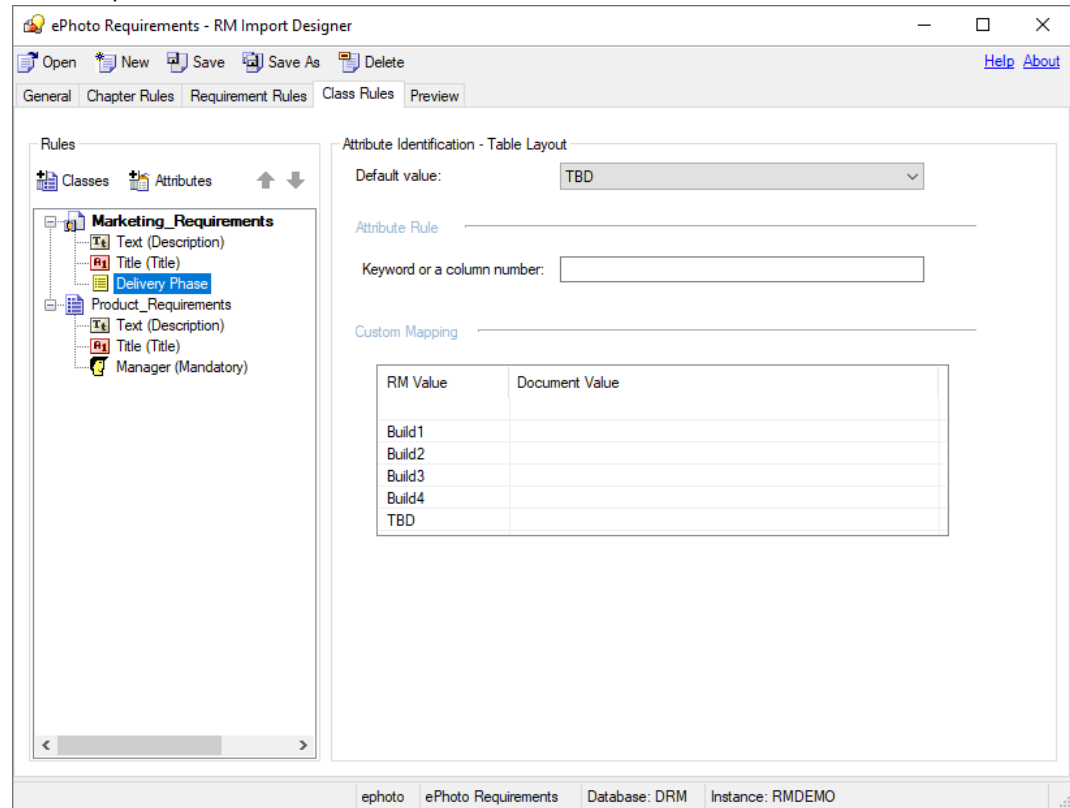


Figure 11-24. Class Rules Tab—Table Layout—List or User Attributes

To complete the Class Rules tab for list or user attributes with the Table option:

- 1 In the **Default value** field, select the default value for the attribute if the attribute value cannot be found in the document. For example, for a **Verification Status** attribute, you could select **Not Scheduled**.
- 2 In the **Keyword or a column number** field, type the keyword or column number to identify the attribute. For example, if the **Verification Status** attribute is in the third column, you could specify 3. The information specified in the cell below the column heading represents the value of the attribute (for example, **Passed**).



NOTE To perform a customized search, use a regular expression. For information about regular expressions, see ["Word Regular Expressions" on page 492](#).

- 3 If you want to map values from the document to the actual values in the Dimensions RM database, under **Custom Mapping**, enter the values under **Document Value**. Separate multiple values with commas. If you map values, the Dimensions RM values appear in the imported document instead of the document values. For example, **Scheduled** is the value in the Dimensions RM database, but **Committed** is the corresponding value in the document.

Preview Tab

The **Preview** tab allows you to see approximately how the document would look in Documents View if it were imported using the template you are working with. The preview appears in a tree-like structure in the left pane.



NOTE If the Word document is set to "Protected" mode with a read-only restriction, an error message could be displayed in the preview screen. To prevent this problem, copy all of the information from the protected Word document and paste it into a new Word document.

To preview the document:

- 1 Click the **Preview** tab.
- 2 Do one of the following:
 - Click the **Select a document to load** button . The **Open** dialog box opens. Select the document you want to preview and click **Open**.
 - Click the **Load the currently selected document** button . Use this option if you made changes to the Word document and want to rerun the parser, or if you selected a previously viewed document in the dropdown list.

The **Parsing Word Document** dialog box shows you the progress of the document parsing. Click **Close** when the parsing is complete. The document structure is displayed in the left pane.

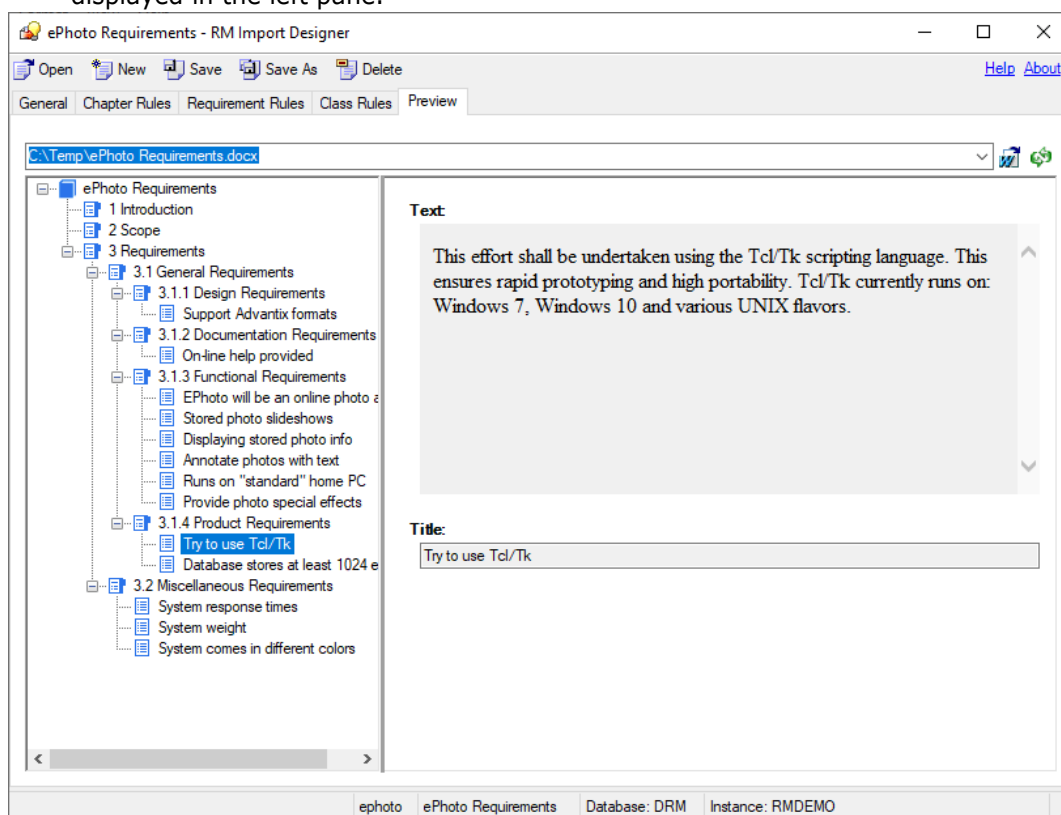


Figure 11-25. Preview Tab

Word Regular Expressions

A number of fields can contain keywords or regular expressions. The content of these fields can either be text that is to be matched (such as "shall") or a Word regular expression.

This section briefly describes how to use Word regular expressions, and provides some examples of their use.



NOTE For comprehensive information about using Word regular expressions, refer to Microsoft documentation.

Word provides a set of wildcard characters that you can use to build regular expressions.

- A **wildcard character** is a keyboard character that represents one or many characters.
- A **regular expression** is a combination of literal and wildcard characters that you use to find text patterns. For example, if you want to search for "manage" but not "management," type **<manage>** instead of **manage**.

The following table lists the wildcard characters that you can use in Word.

Text to Search	Wildcard Character	Examples
Single character	?	a?t finds "act" and "art." It also finds these characters within a word (for example, "action" and "artist").
String of characters	*	p*d finds "pad" and "passed." The asterisk returns all characters and spaces that are between the specified literal characters.
Beginning of word	<	<(para) finds all words that start with "para," such as "parakeet" and "paragraph."
End of word	>	(out)> finds all words that end with "out," such as "about" and "without" but not "outstanding."
One or more specified characters	[]	s[io]n finds "sin" and "son," but not "skin," because "k" is not specified within the brackets.
Single character in a range of characters	[x-z]	[b-s]ought finds "bought," "fought," and "sought." The range must be in ascending order (for example, b-s is correct, but not s-b)
Single character except the characters in the range inside the brackets	[!x-z]	h[!a-m]ck finds "hock," but not "hack" or "hick."
Exactly <i>n</i> occurrences of the previous character or expression	{n}	me{2}t finds "meet" but not "met." h[a-z]{2}d finds "heed," "hand," and "hind," but does not find "hid" or "had". h([a-z]){2}d finds "heed" but not "hand" or "hind."

Text to Search	Wildcard Character	Examples
At least <i>n</i> occurrences of the previous character or expression	{ <i>n</i> ,}	lo{1,}t finds "loot" and "lot."
From <i>n</i> to <i>m</i> occurrences of the previous character or expression	{ <i>n</i> , <i>m</i> }	30{1,3} finds "30," "300," and "3000."
One or more occurrences of the previous character or expression	@	ro@t finds "rot" and "root."
Any wildcard character	\wildcard_character	[\\?] finds all question mark wildcards, [*] finds all asterisk wildcards, and so on.
To group characters and set orders of evaluation	()	h([a-z]){2}d finds "heed" but not "hand," "hind" or "had."



NOTE Wildcard searches are case sensitive.

Example Word Regular Expressions

The following table contains example Word regular expressions that you could use in your templates.

Word Regular Expression	Description
RQMT_[0-9]@	Finds sequences that start with "RQMT_" and any number of numbers. For example, RQMT_0009 .
\<\<SYS[0-9]@\>\>	Finds sequences that start with <<, then "SYS" and any number of numbers, and that end with >>. for example, <<SYS0109>> .
[0-9].	Finds sequences that start with any number and a period. For example, 24. .
0[0-9]@	Finds sequences that start with 0 followed by any number of numbers. For example, 0008 .
[0-9].[0-9].[0-9]	Finds sequences that start with three numbers separated by decimal points. For example, 1.2.6 .

Limitations

This section describes some limitations of the RM Import tool. Be sure to take these limitations into consideration when you design templates.



IMPORTANT! Before you prepare a template that will be used to import a Word document, save the document as HTML and examine the results. This is the way the document will be displayed in RM Browser after it is imported. If you see any formatting problems that are unacceptable (for example, problems with lists, bullets, and fonts), adjust the styles used in the Word document until the results are satisfactory.

Microsoft Word uses unique, proprietary styles and formatting; therefore, the styles and formatting of the Word document (for example, lists, bullets, and fonts) are not necessarily preserved in Document View. However, the text is always imported, so there is no data loss.

Roundtripping between Dimensions RM and Word is not supported. You cannot import the changes you make in Document View back into the original Word document.

Custom headings that you create based on standard Word headings are imported as standard Word headings, not as custom headings.

On the **Requirement Rules** tab for the Keyword option:

- If you select the **Include entire table as part of requirement text** check box, the keyword must be in the table to be included as part of the requirement. The entire table that contains the keyword is the requirement.
- If you do *not* select the **Include entire table as part of requirement text** check box, and if the **Begin Pattern** keyword is found and the end of the chapter is reached, the table is included as part of the requirement.
- If the keyword you typed under **Begin Pattern** is found and the end of the chapter is reached, the requirement is captured, even if the keyword you typed under **End Pattern** is not at the end of the chapter.

Importing every cell in a table as a requirement is not supported.

If a list number in the Word document is preceded by text (such as *Requirement#*), the text is not imported. Therefore, *Requirement #1* in the Word document is imported as *1*.

If you use the Entire sentence option to capture attributes, lists in the Word document might not be imported.

RM Import Designer Examples

This section contains examples of Word documents and explains how their structure determines how templates are designed in RM Import Designer. It also contains illustrations of how the document will appear in RM after Import.

Begin and End Keyword

In this example, all four requirements are captured, because when the keyword you typed under **Begin Pattern** is found and the end of the chapter is reached, the requirement is captured, even if the keyword you typed under **End Pattern** is not at the end of the chapter.

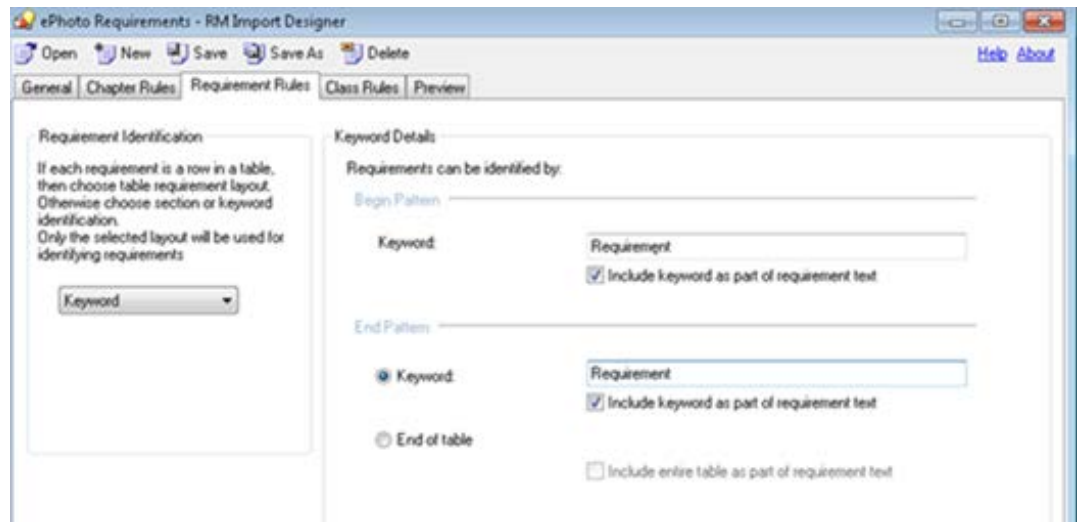
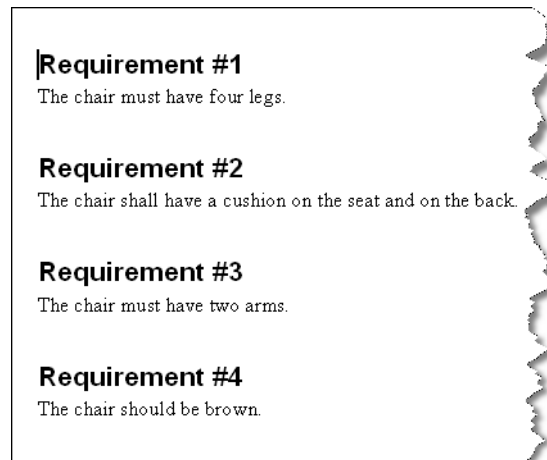
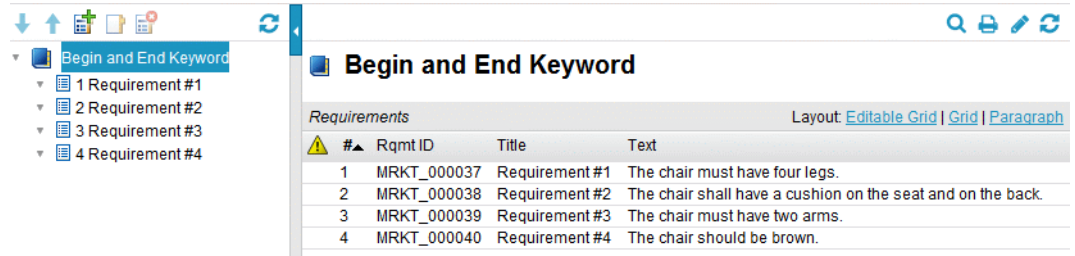


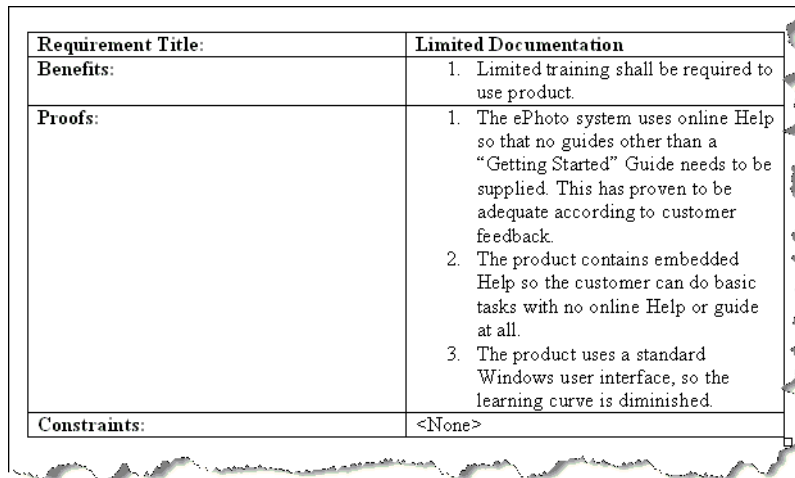
Figure 11-26. Begin and End with Keyword ID



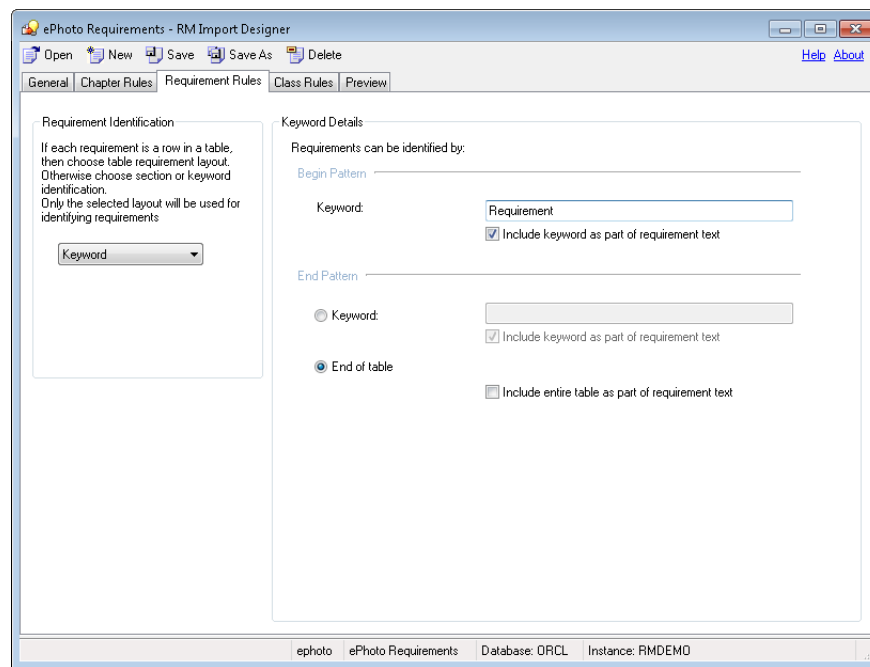
#	Rqmt ID	Title	Text
1	MRKT_000037	Requirement #1	The chair must have four legs.
2	MRKT_000038	Requirement #2	The chair shall have a cushion on the seat and on the back.
3	MRKT_000039	Requirement #3	The chair must have two arms.
4	MRKT_000040	Requirement #4	The chair should be brown.

Entire Table with a Keyword is the Requirement

In this example, the entire table is captured because the **End of table** option was selected in the **End Pattern** group, and the **Include entire table as part of requirement text** check box was selected.



Requirement Title:	Limited Documentation
Benefits:	1. Limited training shall be required to use product.
Proofs:	1. The ePhoto system uses online Help so that no guides other than a "Getting Started" Guide needs to be supplied. This has proven to be adequate according to customer feedback. 2. The product contains embedded Help so the customer can do basic tasks with no online Help or guide at all. 3. The product uses a standard Windows user interface, so the learning curve is diminished.
Constraints:	<None>



1.1 Limited Documentation

Propose Refresh Edit Print

Category: RMDEMO

Standard Attributes

Rqmt ID: MRKT_000041 Title: Limited Documentation

Requirement Title:	Limited Documentation
Benefits:	1. Limited training shall be required to use product.
Text:	1. The ePhoto system uses online Help so that no guides other than a "Getting Started" Guide needs to be supplied. This has proven to be adequate according to customer feedback.
Proofs:	2. The product contains embedded Help so the customer can do basic tasks with no online Help or guide at all.
	3. The product uses a standard Windows user interface, so the learning curve is diminished.
Constraints:	<None>

Table Option with Every Row

In this example, the title is captured because the title is in the third column of the tables, and on the **Class Rules** tab, for the **Title** attribute, **3** was typed in the **Keyword** or a

column number box under **Attribute Rule**.

3 REQUIREMENTS

3.1 General Requirements

3.1.1 Design Requirements

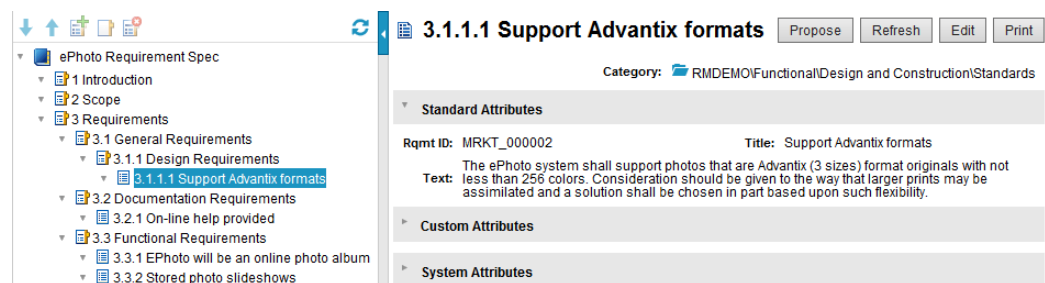
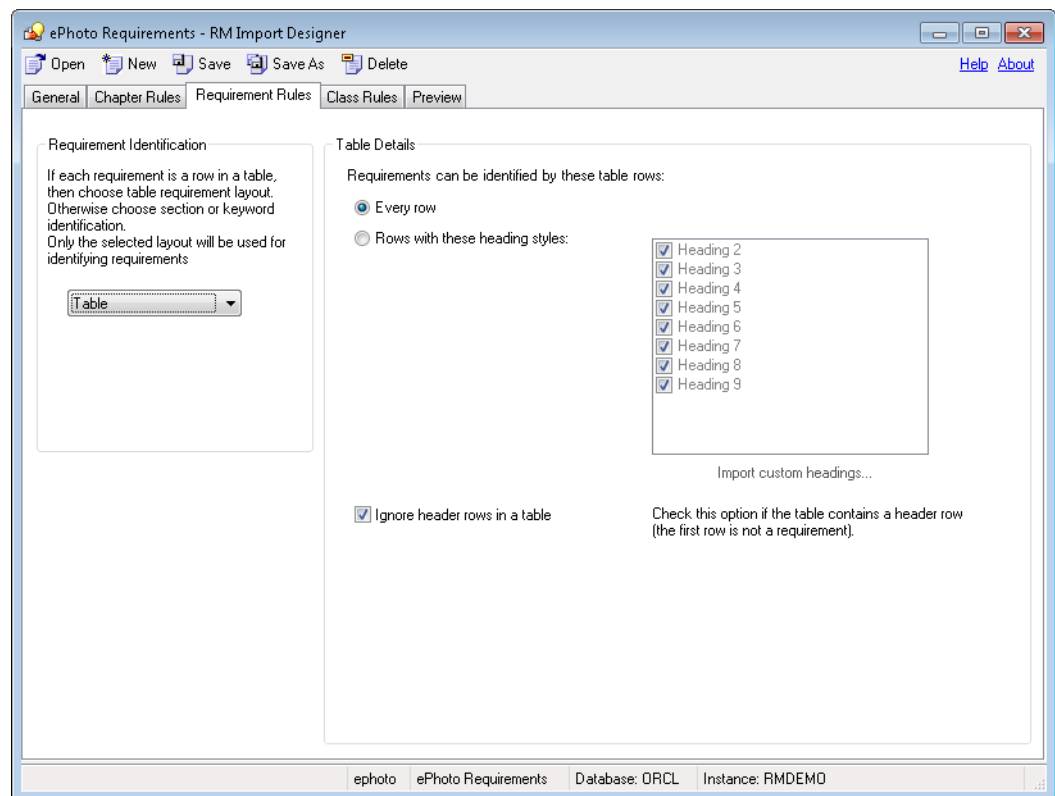
#	Rqmt ID	Title	Text
3.1.1.1	MRKT_000002	Support Advantix formats	The ePhoto system shall support photos that are Advantix (3 sizes) format originals with not less than 256 colors. Consideration should be given to the way that larger prints may be assimilated and a solution shall be chosen in part based upon such flexibility.

3.1.2 Documentation Requirements

#	Rqmt ID	Title	Text
3.1.2.1	MRKT_000007	On-line help provided	The ePhoto system shall make the use of on-line help so that no documentation other than a "Getting Started" guide needs to be supplied.

3.1.3 Functional Requirements

#	Rqmt ID	Title	Text
3.1.3.1	MRKT_000001	EPhoto will be an online photo album	The ePhoto system shall enable the user to browse an on-line photo album. It shall look and feel like an electronic photo album, just like the one on the coffee table.
3.1.3.1	MRKT_000001	Stored photo	The ePhoto system shall provide the ability to create and delete photos.



Section Option with Keywords

In this example, every paragraph containing the specified keywords is captured as a

requirement.

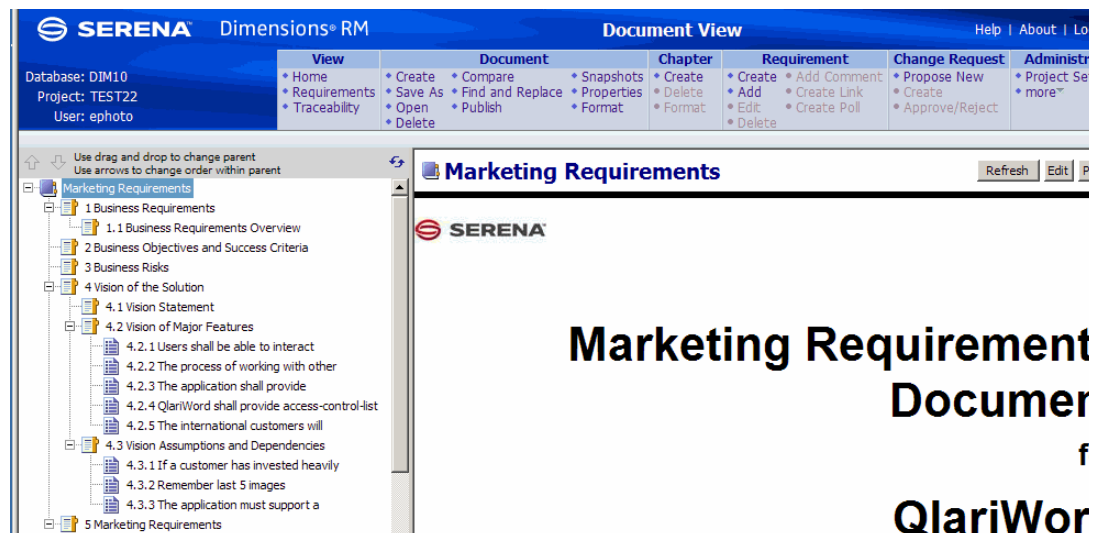
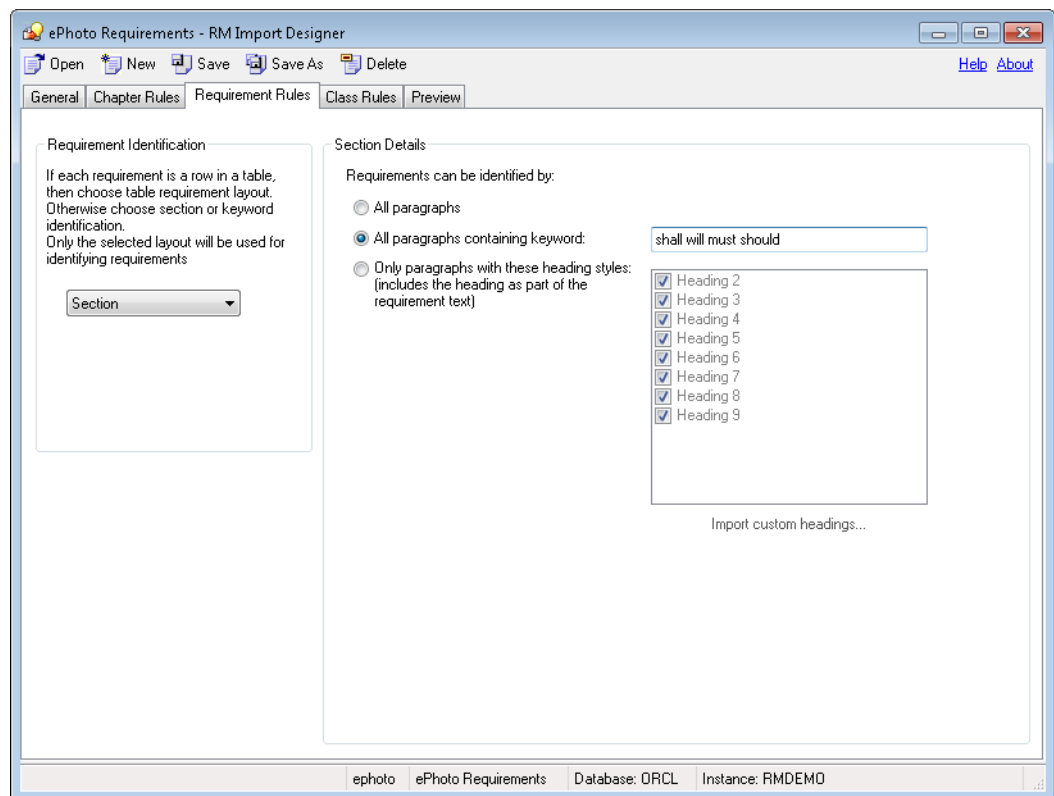
- The process of working with other shall be made easier by using document workspaces.
- The application shall provide as part of the GUI a means for users to check for updated versions of files, confirm if team members are online, view lists of related files, and view file properties.
- QlariWord shall provide access-control-list management (ACLM) for all documents.
- The application must support a spellchecker and grammar checker.

4.3. Vision Assumptions and Dependencies

- The international customers will require QlariWord to support their local language.
- If a customer has invested heavily in Word, QlariWord must be able to communicate with it bi-directionally.

5. Marketing Requirements

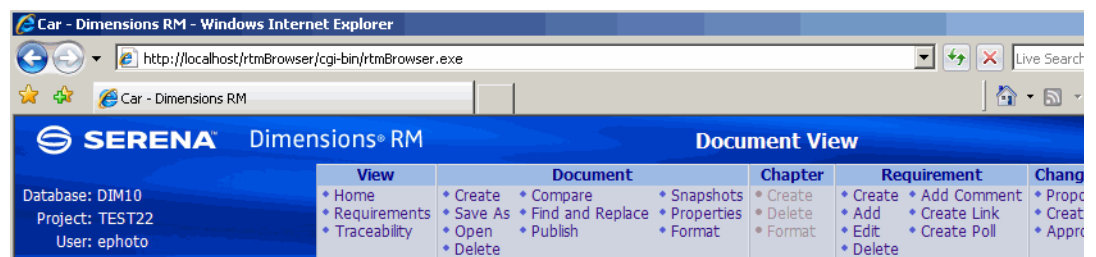
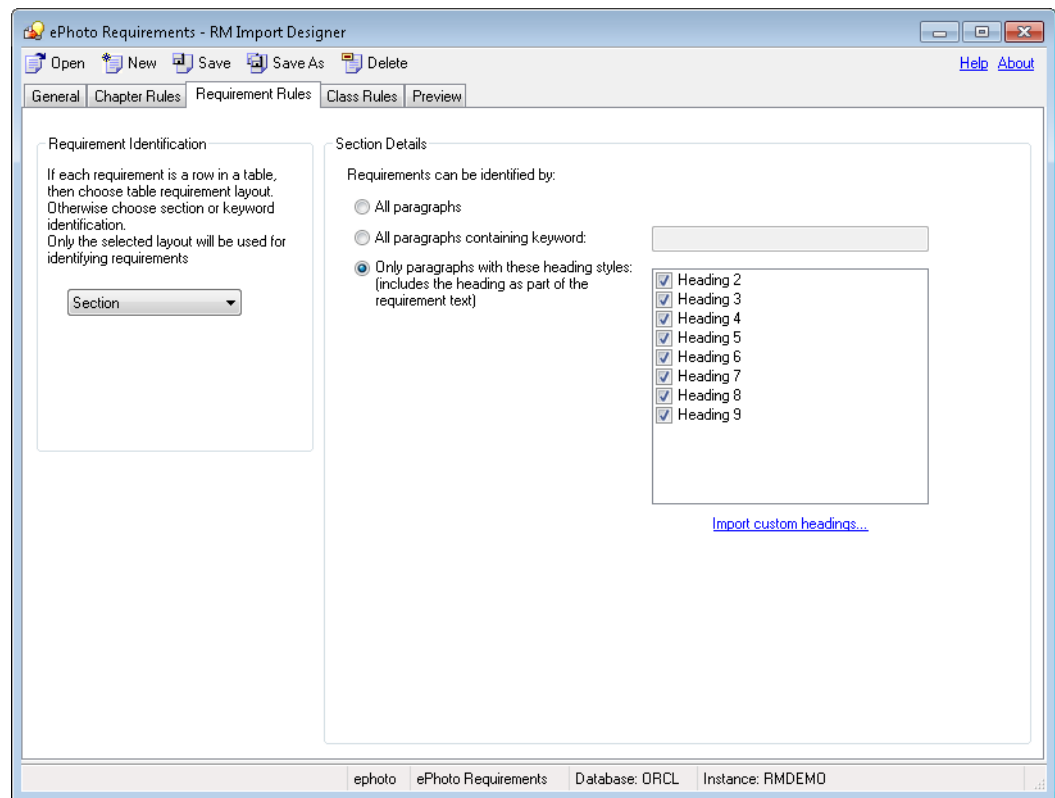
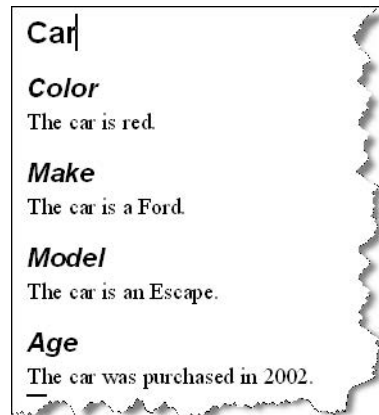
Req. #	Description
5.1.	Users will be able to choose the language they wish to work in. The default will be U.S. English.
5.2.	The process of working with other shall be made easier by using document workspaces.
5.3.	The application will simplify the task of working with others to co-author, edit, and review files.
5.4.	The application must provide as part of the GUI a means for users to check for updated versions of files, confirm if team members are online, view lists of related files, and view file properties.



Heading Styles

In this example, the Section layout is used. Color, Make, Model, and Age have the Heading

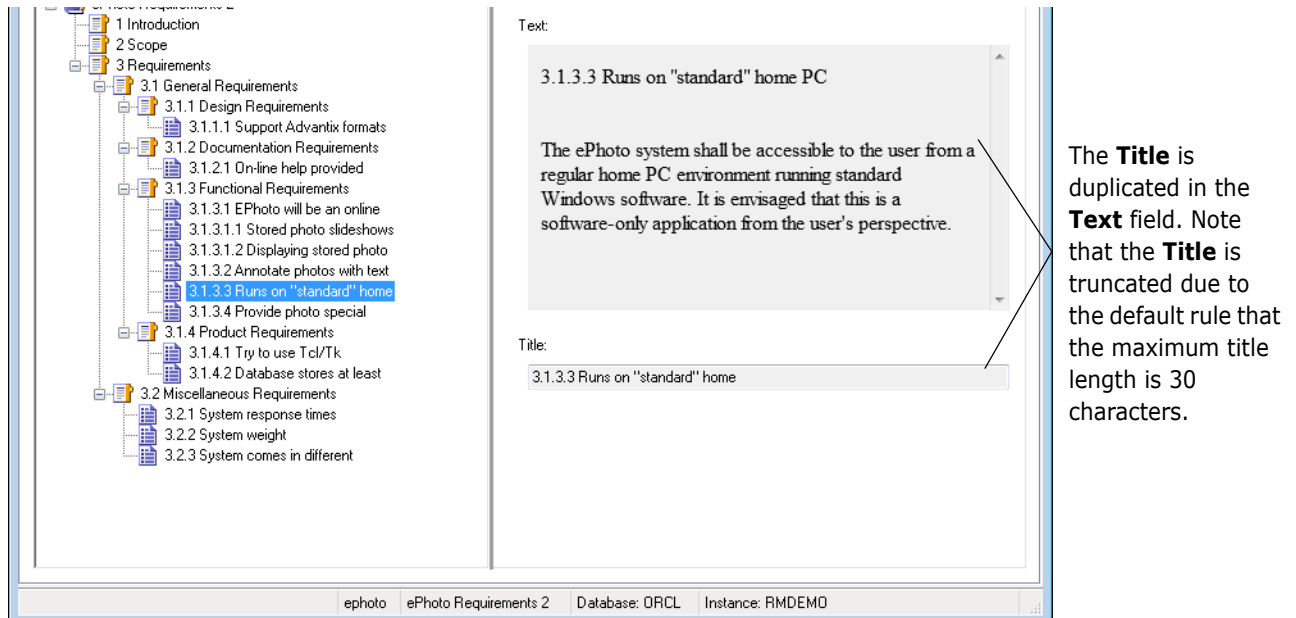
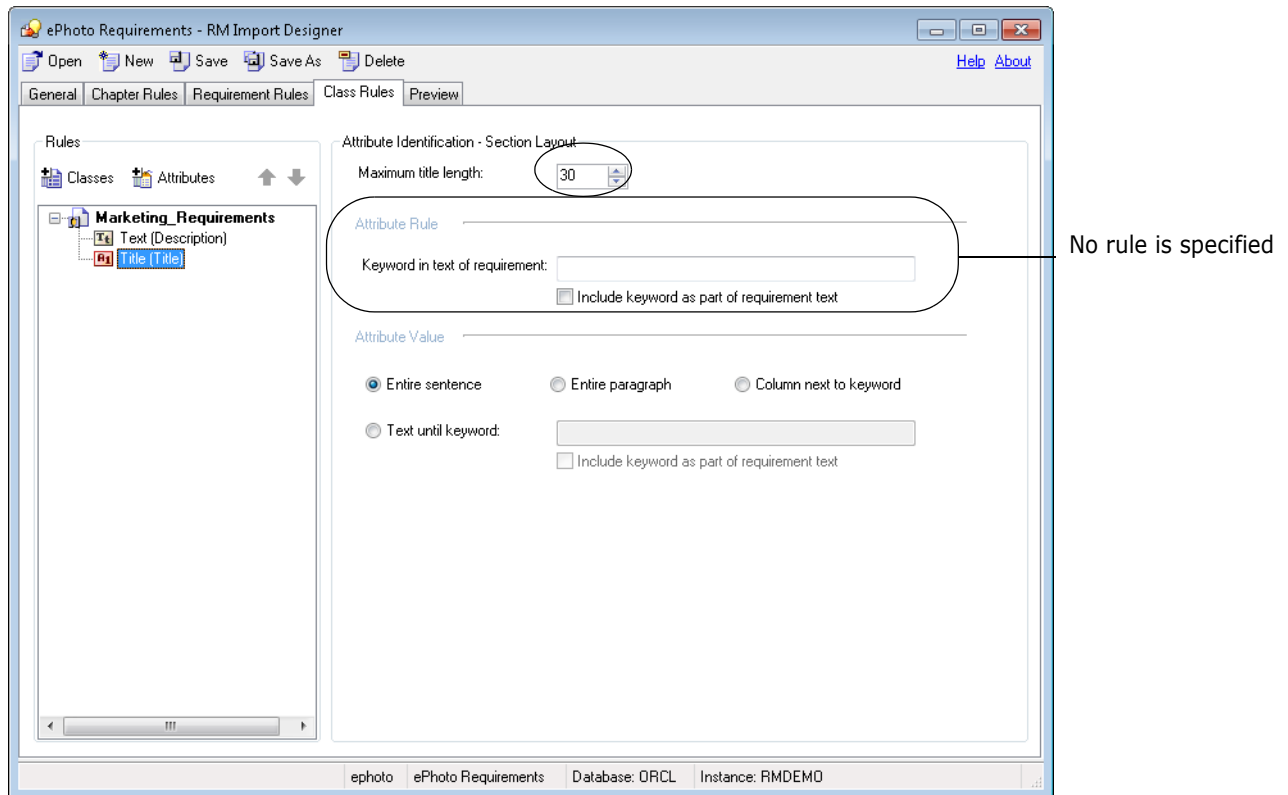
2 style, while Car is a Heading 1 and therefore is not captured as a requirement.



Capturing Title and Description with No Title Rule

When you add a class to the Class Rules tab in RM Import Designer, the Title and Description attributes, along with the mandatory attribute, are added to the class rules.

You can specify a rule for each of these attributes that indicates how the values should be identified and captured from the Word document. These rules are optional. For attributes other than Title and Description, if no rules are specified, default values are used. The following illustration shows the case where the **Attribute Rule** field is empty; thus there is no rule.



The next example shows what happens when you add a rule for the Title attribute.

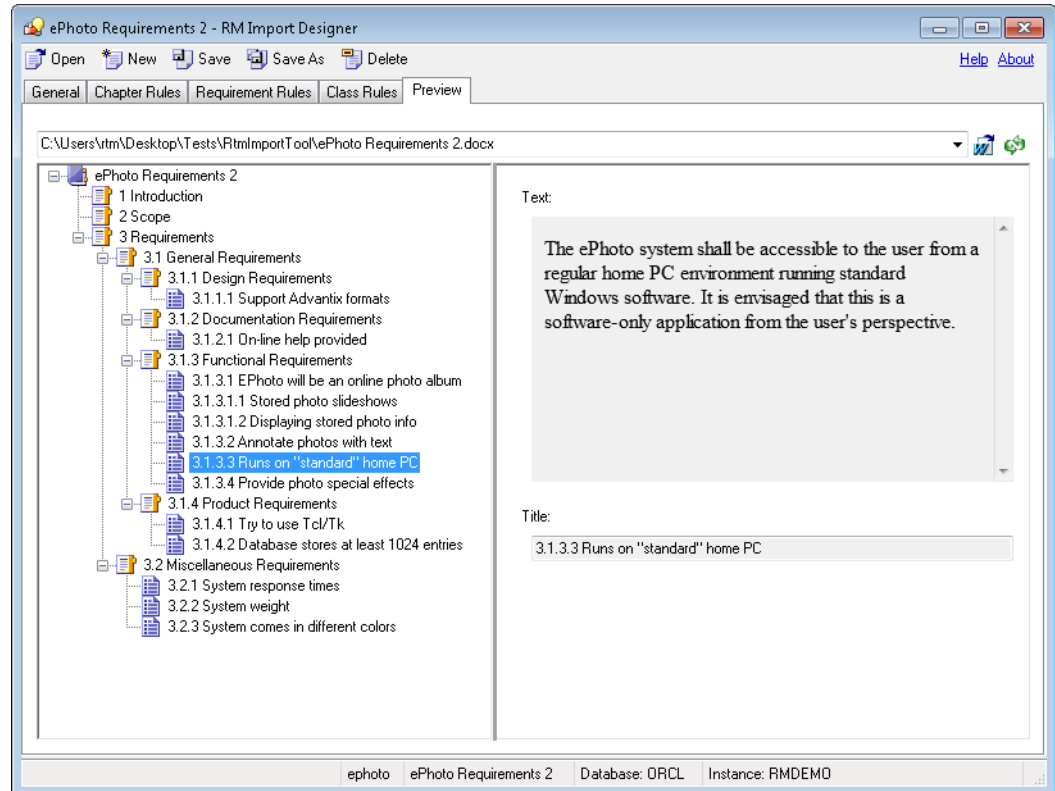
Capturing Title and Description with Title Rule

In this example, a wildcard character is specified in the **Attribute Rule** field, and the **Include keyword as part of requirement text** check box is selected. Using the **?** wildcard character means that the first sentence with any character will be captured as a title. Because there is a rule, the title will not be duplicated in the description.



NOTE Wildcards

For more information about wildcards, see ["Example Word Regular Expressions"](#) on page 493.



Chapter 12

Instance Administration

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About Instance Administration

Dimensions RM supports two types of administrators: those assigned to control an instance and those assigned to control the environment.

Administrator (Instance Administrator)

A group defined within each instance. Members of this group are referred to as Instance Administrators, and, as members of that group, may perform all administrator functions within the boundary of the assigned instance. For example:

- Create users and groups, with no visibility to user or group settings beyond their own instance
- Modify the instance schema, attribute settings,
- Define and/or modify categories
- Set default instance settings

The Instance Administrator group is assigned permissions to Actions accessible from the Administration menu, as well as those accessible from the Wrench (Spanner) icon under the Categories panel on the Home View.

System Administrator

Members of the System Administrator group are responsible for functions that operate across the database and its environment. Membership in the System Administrator group must be granted through RM Manage (see ["The Role of System Administrator" on page 712](#)).

Managing Users

Users are added, edited and deleted from the **Users** tab in **Manage Users/Groups** under the Administration menu. This menu may also be accessed from **Manage Category Assignment** on the Home View.



IMPORTANT!

In Dimensions RM Releases prior to Dimensions RM 13 (25.2), it was possible, using RM Manage or Web Services, to assign permissions at the User Level. **This feature has been deprecated.**

The **Manage Users/Groups->Users** dialog contains a list of users and, when selected, the details associated with their Login and Group assignment.

To limit the users displayed click the drop-down next to the . Check boxes under Status (Active, Disabled) or limit display by Login Source (e.g., Internal, LDAP, SSO).

The following functions are available from User Management:

Export User Information: [Exporting User Information](#)

New User Creation: [Creating a New User](#)

Assign Users to Groups: [Assigning Users to a Group](#),

Unassign users from Groups: [Un-Assigning Users from a Group](#).

Create a new user with group and category membership identical to an existing user: [Copying an Existing User](#).

Edit User information: [Editing a User](#).

Change the User login: [Changing the Login of a User](#)

Delete a User: [Deleting a User](#).

Exporting User Information

To Export listed user information:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Users**.
- 2 To filter the user data exported click the drop-down next to the .
- 3 Click **Export** from below the list of users, to export all user data for the list of users displayed to .csv

Creating a New User

Notes about User Creation:

When using Dimensions RM as the login source, rules specific to the password settings, expiration, and notification are also established in RM Manage and are applied to all instances in the database by the System Administrator. For additional details, see ["Setting Up Password Security" on page 794](#).



NOTE Users Exist Once in the Database

Users exist once in the database. Once a user ID is created, they may be assigned to one or many instances.

If the User already exists, but has not been assigned to the instance, proceed to ["Assigning Users to a Group" on page 512](#), in order to include the user in the current instance.



NOTE Login Source: SSO or LDAP

Users may be created manually or automatically depending on the Login Source and the choices made when establishing the login Source, see ["Specifying Login Sources in RM Manage" on page 780](#).

To create a new user:

- 1** In **Manage Users/Groups** under the Administration menu, highlight the **Users tab**.
- 2** Select **New** from below the list of users, to open the **New user name** dialog.
- 3** Enter the name (ID) for the new user in the box provided.
If the User exists assign the new user to a Group, see ["Assigning Users to a Group" on page 512](#).
- 4** Enter a password for the new user. The password must comply with Password Rules.
The rules specific to the password settings, expiration, and notification are established in RM Manage and are applied to all instances in the database by the System Administrator. For additional details, see ["Setting Up Password Security" on page 794](#).
- 5** Select OK to create the new user and close the **New user name** dialog.
- 6** Enter optional e-mail, phone and location details.
- 7** If the new user is to be assigned to LDAP or SSO for login:
 - a** Select LDAP or SSO.
 - b** Click **Save**.
 - c** To assign the new user to a Group see ["Assigning Users to a Group" on page 512](#)
- 8** If the **login source** is RM, do the following:
 - a** Select one or more of the following password options:
 - **User Must Change Password at Next Logon**
 - **User Cannot Change Password**
 - **Password Never Expires**
 - **Account Disabled - A User Account may be disabled in which case:**
The user may not log in, although change history will be maintained.
 - **Limited user - The user has Read Only access to the Instance.**

Note: The Limited user setting is only available if established for the database in RM Manage. See ["Setting the License Server" on page 714](#).

A user assigned Read Only access, may be added to a groups and categories, but in all cases will be limited to **Read Only** access.
 - b** Click **Save**.

To assign the new user to a Group see ["Assigning Users to a Group" on page 512](#)

Copying an Existing User

Copying a user copies permissions, the groups to which the users is assigned, as well as the instance assignments.

To copy an existing user:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Users**.
- 2 Select the user you want to copy in the user list.
- 3 Click **Copy**. This opens the **New user name** dialog.
- 4 Enter the user name for the new user into the provided box.
- 5 Click **OK**. This creates the user with all data of the user you copied from and closes the **New user name** dialog.
- 6 In the user details section, do the following:
 - a Specify a password in the **Password** box.
 - b Enter the same password in the **Confirm Password** box.
 - c If desired, fill out the other boxes.
 - d Select one or more of the following password options:
 - **User Must Change Password at Next Logon**
 - **User Cannot Change Password**
 - **Password Never Expires**
 - **Account Disabled**



NOTE Password Options

For RM login Source: If you do not select a password option, users must change their passwords every 60 days. Users get a warning that gives them the opportunity to change their password 14 days before their current password is due to expire. The warning is displayed every time the user logs in Dimensions RM.

For details see [Specifying Login Sources in RM Manage](#).

Editing a User

To edit a user:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Users**.
- 2 Select a user in the user list.
- 3 In the user details section, do any the following:
 - a To change the password, specify a password in the **Password** box and enter the same password in the **Confirm Password** box.
 - b Edit the content of the other boxes.
 - c Select one or more of the following password options:
 - **User Must Change Password at Next Logon**
 - **User Cannot Change Password**
 - **Password Never Expires**

- **Account Disabled**



NOTE Password Options for Login Source: RM

If you do not select a password option, users must change their passwords every 60 days. Users get a warning that gives them the opportunity to change their password 14 days before their current password is due to expire. The warning is displayed every time the user logs in Dimensions RM.

For details see [Specifying Login Sources in RM Manage](#).

- 4 Click **Save**.

Changing the Login of a User

To change a user's login:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Users**.
- 2 Select the user in the user list.
- 3 Enter the new login name into the **User ID** box.
- 4 Click **Save**.

Deleting a User



NOTE Deleting Users

Deleting a user removes them from the database; this should only be done if the user was created in error and made no changes.

To remove future access for a user, while maintaining their history it is common to edit the user account (see [Editing a User](#)) checking the 'Account Disabled' box in the user detail pane. Some organizations also add text (e.g., XX) to the user name making it clear the user no longer has access.

To delete a user:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Users**.
- 2 Select the user you want to delete in the user list.
- 3 Click **Delete**. This opens the **Confirm user delete** dialog.
- 4 Click **OK** to delete the user.

Managing Groups

In Dimensions RM users are defined and assigned to groups. Membership in a group determines their role and the actions available (permissions). Category assignment is also made using Groups.

Access to all Group related functions is made through the Groups tab under the Administration menu->**Manage Users/Groups**.

To assign Users to Groups: [Assigning Users to a Group](#)

or to Unassign: [Un-Assigning Users from a Group](#).

To Create a New Group: [Creating a New Group](#).

To Edit the group information: [Editing a Group](#).

To Create a new Group based on an existing group, including the group members: [Copying a Group](#).

To Delete a Group: [Deleting a Group](#).

For details concerning Group Permissions, please see "[Setting Default Group Permissions](#)" on page 514.

Creating a New Group

To create a new group:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Groups**.
- 2 Click  next to the groups drop-down. This opens the **Create Group** dialog.
- 3 Enter a group name into the **Name** box.
- 4 If desired, specify the purpose of the group into the **Description** box.
- 5 Click **OK** to create the group.

The group will be automatically selected in the groups box to make it available for group assignment. For further information see "[Assigning Users to a Group](#)" on page 512.

Editing a Group

To edit an existing group:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Groups**.
- 2 Select the group you want to edit from the groups box.
- 3 Click  next to the groups box. This opens the **Edit Group** dialog.
- 4 Change group name or description as desired.
- 5 Click **OK** to commit your changes.

Copying a Group

To copy an existing group:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Groups**.
- 2 Select the group you want to copy from the groups box.
- 3 Click  next to the groups box. This opens the **Copy Group** dialog.
- 4 Specify a new group name in the **Name** box.
- 5 Edit the text of the **Description** box as desired.
- 6 Click **OK** to copy the group. The group will be automatically selected in the groups box to allow assigning users to the group. For further information about user assignment, see ["Assigning Users to a Group" on page 512](#).

Deleting a Group

Unused groups may be deleted, however you can not restore a deleted group. It must be created once again.

To delete a group:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Groups**.
- 2 Select the group you want to delete from the groups drop-down.
- 3 Click  next to the groups box. This opens the **Remove Group** dialog.
- 4 Click **OK** to delete the group.

Assigning Users to a Group

Users are assigned to groups from under the Administration menu -> **Manage Users/Groups -> Groups tab**.

The **Group Assignment** dialog only lists groups belonging to the current Dimensions RM instance.

About Category Assignment:

Access to Categories can be assigned with Groups:

Category assignments can be made automatically or selectively when adding users to Groups. Because many organizations have strict access restrictions, the default is to assign user access to categories **selectively**. The choice is displayed at the top of the **Groups Tab**:

- ☐ Automatically assign user(s) to group categorie:
- ☒ Assign user(s) to categories selectively

If **Assign user(s) to categories selectively** is chosen, but no category assignment is made, the user will see the following message when they log in.

This transaction is not permitted for this resource and user.



OK

To correct the issue follow the instructions in ["Manage Category Assignment" on page 522](#).

To assign a user to a group:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Groups**.
- 2 Select the group to which you want to assign users from the group drop-down. Note that groups used by the current Dimensions RM instance are marked with a check mark.
- 3 Select the category assignment method:
 - **Automatically assign user(s) to group categories:** Adds the user(s) to all categories to which the group has access and **grants** access.
 - **Assign user(s) to categories selectively:** Adds the user to all categories the group has access but **denies** access. Access must be granted individually.
- 4 Highlight the name(s) of the user(s) to be added to the target group.
The Group Assignment dialog lists only groups assigned to the current instance.
- 5 Click the directional arrow to move the name(s) from the left (Not assigned column) to (Assigned) on the right ➡.
- 6 Click **Save**.
- 7 If you have selected **Assign user(s) to categories selectively**, select **Category Assignment** in the left column and follow the instructions in ["Manage Category Assignment" on page 522](#).

Un-Assigning Users from a Group

To un-assign users from a group:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Groups**.
- 2 Select the relevant group from in the Group drop-down.
- 3 In the list on the right (**Assigned** list), select the user(s) to be un-assigned.
- 4 Click ⬅.
- 5 Click **Save**.

Setting Default Group Permissions



NOTE Assigning Permissions

As a good general practice, Open Text recommends that no Dimensions RM group or user (including Administrators) ever be granted permission for the actions: REMOVE, UPDATE, and UPDATE_NON_CURRENT.

These actions might be assigned to an administrator in special (perhaps even emergency) situations, or, as in the case of UPDATE, assigned to a the requirement creator during the initial workflow phase, but they should not remain available as a matter of course.

These can be useful command when, for example, removing records resulting from erroneous bulk imports.

Remove - permanently removes a requirement revision from the database, rather than marking it for deletion and maintaining the change as part of the requirement history.

Update modifies a requirement - in place - rather than maintaining the change in its revision history. This can be useful during the requirement creation phase, but if used throughout the process there would be no history and no ability to report changes or to track trends.

Update non-current allows a modification to a non-current item. in effect, changing history. This should be used only in case of emergency. If, as an administrator, you need it - turn it on - use it and then turn it off.

For details about the available actions and their associated permissions, see ["Valid Actions" on page 526](#).

To set the general permissions for a group, do the following:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **permissions**.
- 2 To simplify group display, you can limit the view to those groups you wish to modify by doing the following:
 - a Select the group drop-down.
 - b Select **Deselect All**. This temporarily hides all groups.
 - c Select the groups to be modified.

- 3 The Actions listed are separated into functional areas.

For example, permissions associated with Actions relating to **Classes** (requirement types), **Documents**, **Reports**, **Collections** or **Categories** may be expanded by clicking on the ">". Once expanded, permissions for each group may be modified.

- 4 Select the option box to assign ☒ or to unassign permissions ☐.

For details about the available actions and their associated permissions see ["Valid Actions" on page 526](#).

- 5 Click **Save**.

Granting or Revoking All Permissions

To grant or remove all permissions, do the following:

- 1 In **Manage Users/Groups** under the Administration menu, highlight **Permissions**.
- 2 Select the option box directly below the group name to grant all group access rights ☒ or to revoke all group access rights ☐.

Some access rights **are not recommended** to be granted, expand the sections to review those access rights. Those not recommended are marked .

For details about the available actions and their associated permissions, see ["Valid Actions" on page 526](#).

- 3 Click **Save**.

Managing Teams

Teams in Dimensions RM are a great way to organize people in the same way as they are in the real world. If a user attribute is configured to Team mode, you can assign a team instead of a group or individual users. A team can have users of different groups (e.g. supervisor and executive staff). As with any other attribute, you can search for requirements where that attribute matches (or not matches) a certain team. However, the following scenarios teams are a helpful addition:

Agile: Teams can be assigned to releases and sprints.

Workflow: As a user attribute can be used to define the owner of a requirement, in Team mode this means that all members of the team own that requirement, and that any team member can process the requirement.

Before you start

Before you can use teams, you must do the following:

- 1 Enable the Teams functionality; for details see ["• Teams" on page 72](#).
- 2 On the desired classes, ensure that a user attribute with selection mode "Teams" is available.

For details, see "User Attribute" on page 553.

The **Manage Users/Groups-->Teams** dialog provides access to lists of Teams, once selected, the members of the Team. From this dialog **Teams** can be created and administered.

To Create a Team: [Creating a New Team](#).

To Edit an existing Team: [Editing a Team](#).

To Create a new Team based on an existing Team, including the Team members: [Copying an Existing Team](#).

To Delete a Team: [Deleting a Team](#).

To assign Users to a Team: [Assigning Users to a Team](#)

or to Unassign: [Un-Assigning Users from a Team](#).

Creating a New Team

To create a new team:

- 1 Select **Manage Users** from the **Administration** menu. This opens the **User Management** dialog.
- 2 In the left column, select **Teams**.
- 3 Click **New**. This opens the **New Team** dialog.
- 4 Enter the name for the new team into the provided box.
- 5 Click **OK**. This creates the team and closes the **New Team** dialog.

Editing a Team

To rename a team:

- 1 Select **Manage Users** from the **Administration** menu. This opens the **User Management** dialog.
- 2 In the left column, select **Teams**.
- 3 From the **Teams** box, select the team you wish to rename.
- 4 Click **Edit**. This opens the **Edit Team** dialog.
- 5 Enter the new name for the team into the provided box.
- 6 Click **OK**. This renames the team and closes the **Edit Team** dialog.

Copying an Existing Team

To copy a team:

- 1 Select **Manage Users** from the **Administration** menu. This opens the **User Management** dialog.
- 2 In the left column, select **Teams**.
- 3 From the **Teams** box, select the team you wish to copy.
- 4 Click **Copy**. This opens the **Copy Team** dialog.
- 5 Enter the name for the new team into the provided box.
- 6 Click **OK**. This creates the team with the users from the original team and closes the **Copy Team** dialog.

Deleting a Team

To delete a team:

- 1 Select **Manage Users** from the **Administration** menu.
- 2 In the left column, select **Teams**.
- 3 Select the team you wish to delete.
- 4 Click **Delete**. This opens the **Delete Team** dialog.
- 5 Click **OK**.
This deletes the team and closes the **Delete Team** dialog.

Assigning Users to a Team

To assign users to a team:

- 1 Select **Manage Users** from the **Administration** menu. This opens the **User Management** dialog.
- 2 In the left column, select **Teams**.
- 3 From the **Teams** box, select the team you wish to assign users to.
- 4 In the **Not assigned** list, select the user or users you want to assign.
- 5 Click  .
- 6 Click **Save**.

Un-Assigning Users from a Team

To un-assign users from a team:

- 1 Select **Manage Users** from the **Administration** menu. This opens the **User Management** dialog.
- 2 In the left column, select **Teams**.
- 3 From the **Teams** box, select the team you want to un-assign users from.
- 4 In the **Assigned** list, select the user or users you want to un-assign.
- 5 Click  .
- 6 Click **Save**.

Managing Categories

The following sections describe the ways in which categories can be managed from within the user interface. Typically the management of categories is performed by administrators.

About Categories

Categories are represented by a hierarchical structure within each Dimensions RM instance, with sub-categories supported. Categories work like folders on a file system,

holding objects (requirements, reports, test cases, etc.) associated with projects or components in order to provide a familiar look and feel. Movement within the category structure can be simplified by designating category "favorites".

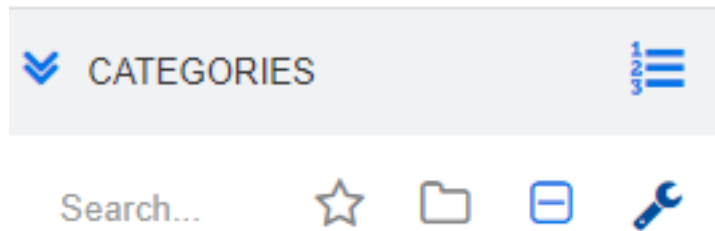
All RM objects, including reports, can be managed within categories, and, like folders on the file system, an object can be contained in only one category. Each node of the category hierarchy can have different permissions settings for user groups. All nodes in the hierarchy share the same schema.

The topmost category is the name of the Dimensions RM instance. The category structure is displayed in the leftmost pane on the home page. The current category path (as with folders on the file system) is displayed just under the menu on the browser. The path from the requirements tab, as well as from all relevant dialogs, can be expanded for selection or modification.

Permissions to specific actions (create, edit, copy, read, etc.) are granted to the group. For example, read access may be assigned to all groups while the permission to edit can be restricted to (for example) members of the Analysts group.

Category access is managed by group. Analysts may have access to create, edit, and copy to a category containing Business Requirements, while they may have only Read access to a category containing Functional requirements.

Categories are managed using the wrench (spanner) icon on the Home View Categories panel.



Once the wrench is selected, icons are raised indicating functions available.

	Category / Wrench Icons	Action
	Plus	Add a New Category (page 520)
	Edit	Edit Category includes renaming an existing Category or modifying the description (page 520). Adding a more interesting icon in color or black and white (page 520).
	Deactivate/ Activate	Select this icon to Deactivate or to Activate a Category (page 521)
	Delete	Permanently remove a Category (page 519)
	Manage Category Assignment	These silent heads provide access to the complete list of User and Group management, including Category Assignment (page 522).

Category Naming Conventions

Characters Allowed: All characters and Unicode characters except

- Backslash (\)
- Forward slash (/)

Maximum length: Up to 64 characters

Maximum length for full path: Up to 1024 characters

The full path contains all category names from the root category to category you wish to create. For each category level, a backslash is added (e.g. RMDemo\Data).

Adding a Category

To add a category:

- 1 Select the wrench (spanner) icon on the Home View Categories panel.
Please note that the wrench must be selected once again to discontinue category management.
- 2 In the **Category** tree, highlight the parent for the new category.
Drag and Drop may be used to re-locate the new category after creation.
- 3 Select the add icon 
- 4 In the **Category Name** field, type the name of the new category; a maximum of 64 characters is allowed.
- 5 In the **Description** field, type an optional category description.
This description appears as a tooltip when users hover over the category in the category tree.
- 6 Leave this box checked if the category access rights should be inherited from the parent.
For changes in User or Group access see ["Manage Category Assignment" on page 522](#).
- 7 Click the **Add** button.

Deleting a Category

Deleting a Category permanently removes it from the Instance.

Please Note:

The Root Category cannot be deleted, although it can be renamed.

The Category must be empty. Any content, requirements or subcategories, must be deleted, or relocated, before the category can be deleted.

- 1 Select the wrench (spanner) icon on the Home View Categories panel.
Note that the wrench must be selected once again to discontinue category management.

- 2 Highlight the category to be deleted.
- 3 **Click the Delete icon** 
- 4 When prompted to confirm the deletion, click **OK**.

Renaming a Category

To rename a category or modify its description

- 1 Select the wrench (spanner) icon on the Home View Categories panel.
Please note that the wrench must be selected once again to discontinue category management.
- 2 Highlight the category to be renamed.
- 3 Select the Edit icon.
- 4 In the **Category Name** field, type the new name.
- 5 In the **Description** field, modify or enter an optional category description.
This description appears as a tooltip when a user hovers over the category in the category tree.
- 6 Click the **Rename** button.

Adding a Category Icon

Distinguish one category from another using symbols and color. Category icons allow the team to differentiate systems from subsystems, projects from products, sets of test cases from design specifications making category folders easier to find.

To add a Icon in Color or Black and White:

- 1 Select the wrench (spanner) icon on the Home View Categories panel.
Please note that the wrench must be selected once again to discontinue category management.
- 2 Highlight the category to which the icon will be added
- 3 Select the Edit icon.
- 4 Replace 'Common' or the currently assigned icon with one of your choice from the drop-down list provided.
- 5 Select the world's smallest paint brush to change the color.



Activating or Deactivating a Category

Categories that permanently or periodically unused may be deactivated. Once deactivated, the default behavior will be to hide them from view and to set the content to 'Read Only'.

It is possible to modify user settings to display deactivated categories. For further information, see "[Categories: Show Inactive Categories](#)" on page 71.

A deactivated category is represented by a name in gray italic text.

To activate a category:

- 1 Select the wrench (spanner) icon on the Home View Categories panel.
Please note that the wrench should be selected once again to discontinue category management.
- 2 Select an inactive category you want to activate.
- 3 Click **Activate/Deactivate Category**. This opens the **Activate Category** dialog.
- 4 Confirm the **Activate Category** dialog by clicking **Yes**.

To deactivate a category:

- 1 Select the wrench (spanner) icon on the Home View Categories panel.
Please note that the wrench should be selected once again to discontinue category management.
- 2 Select an active category you want to deactivate.
- 3 Click **Activate/Deactivate Category**. This opens the **Deactivate Category** dialog.
- 4 Confirm the **Deactivate Category** dialog by clicking **Yes**.

Moving a Category

To move a category:

- 1 Select the wrench (spanner) icon on the Home View Categories panel.
Please note that the wrench should be selected once again to discontinue category management.
- 2 Drag and drop the category to the desired location in the tree.

Manage Category Assignment

Access Rights control the assignment of groups to categories, as well as the permissions assigned within them.

Select the wrench (spanner) icon on the Home View Categories panel, click on the Group icon and then **Category Assignment**; this dialog provides the following functions:

Show All: Shows access for all groups and users within groups.

Show access for User: Use the Search icon to select a single user for whom all group and category access will be shown.

Filter categories: Filters the category tree for the text string entered.

Filter groups/users: Filters the category access tree based on selections.

Inherit access rights from parent category: If enabled, the rights of a category are identical with the rights of the parent category. If disabled, access rights can be set independently from the parent.

Copy User Access: Displayed at the bottom of the dialog, this tab opens a dialog which allows all category access to be copied from from the user selected to another.

Remove All Assignments: Removes access to all categories for the selected user. A useful setting for users who leave the team, as their history is maintained while removing their access.

Export: Exports the group assignment for the selected category. For details, see ["Exporting the User Group Assignment for a Category" on page 524](#).

Changing Access Rights for a Category

To change the access rights for a category:

- 1 Select the wrench (spanner) icon on the Home View Categories panel and then select the Group icon.
- 2 Select **Category Assignment**
- 3 Ensure that the **Show All** option is selected.
- 4 Select the category for which you want to change the access rights.
- 5 Ensure that the **Inherit access rights from parent category** box is clear.
- 6 Select the groups to which access should be permitted or deselect (uncheck) the groups to which access should be removed.

Individual users may be disallowed access to a category to which their group has access; although this is not recommended. Exceptions can cause confusion when trying to figure out why Joe has access but Mary does not. It is better to create a new group when exceptions are necessary, even for a few users.

- 7 If required, modify access rights for other categories.
- 8 Click **OK**.

Copying Access Rights to Another User Account

When you create a user account, the new user has access to all categories for which the assigned groups allow access. If you want to limit (or grant for existing users) the access rights, you may just copy from an existing user.



TIP

If you have several different access right setups, you may want to create a user account which acts as a template. This account should be named such that it identifies the purpose and - for security reasons - be disabled. For further information on how to create user accounts, see ["Creating a New User" on page 507](#).

To copy access rights to another user account:

- 1 Select the wrench (spanner) icon on the Home View Categories panel and then select the Group icon.
- 2 Select **Category Assignment**.
- 3 Select the **Show access for User** option.
- 4 Select a user from the drop-down list or find a user by clicking , which opens the **Find & Select User** dialog, see ["Find and Select List Values" on page 41](#).
- 5 Click **Copy User Access...** to open the **Copy Category Group Assignment to** dialog. This dialog contains only users which are in the same group(s) as the selected user.
- 6 Select one or several users.
- 7 Click **OK** to close the **Copy Category Group Assignment to** dialog.
- 8 Click **OK** to close the **Category Assignment** dialog.

Removing Access Rights for a User Account

If you want to remove all access rights for a user account, this means that the user can still log on to RM Browser, but is unable to view or edit any object (e.g. requirements).

To remove access rights for a user account:

- 1 Select the wrench (spanner) icon on the Home View Categories panel and then select the Group icon.
- 2 Select **Category Assignment**.
- 3 Select the **Show access for User** option.

- 4 Select a user from the drop-down list or find a user by clicking  , which opens the **Find & Select User** dialog, see ["Find and Select List Values" on page 41](#).
- 5 Click **Remove All Assignments...**
- 6 Confirm the dialog to remove all category/group assignments.
- 7 Click **OK** to close the **Category Assignment** dialog.

Exporting the User Group Assignment for a Category

The export creates an Excel file that contains all category/user assignments along with the group through which the user is granted access to that category. This file may be modified, and then imported to simplify mass changes.

- 1 Select the wrench (spanner) icon on the Home View Categories panel and then select the Group icon.
- 2 Select **Category Assignment**.
- 3 Select the desired category.
- 4 Click **Export...** This opens the **Export user group assignment for selected groups** dialog.
- 5 De-select the groups for which you do not want to export the category/user group assignments.
- 6 If you do not wish to export the category/user group assignment for subcategories, clear the **Include subcategories** option.
- 7 Click **OK**.

Importing the User Group Assignment for a Category

An exported Excel or CSV file may be modified and then imported in order to more easily apply mass role changes.

- 1 Select the wrench (spanner) icon on the Home View Categories panel and then select the Group icon.
- 2 Select **Category Assignment**.
- 3 Select the desired category.
- 4 Click **Import ...** This opens the **Import User Assignments** dialog.
- 5 From the groups drop-down uncheck the groups for which you do not want to import the category/user group assignments.
- 6 Click **OK**.

Copy Category Content

Category content may be copied from one category to another using the **Copy Category Content** Action listed on the Actions pane in the **Home View**.

This function is useful for organizations that need to copy all aspects of an existing category or category tree for reuse. For example:

Strict hierarchy naming for each Project: Organizations that use a strict hierarchy of category names, default classes, group assignments and permissions. To address this use case, a basic structure can be created, including template/starter requirements, which can be used as a basis for new projects.

Strict Category Structure: The customer is branching project sub-components and has specific category settings, including access permissions, category values including default values for lists and user fields. For this use case, an entire structure or substructure can be copied

To Implement:

- 1 Create or designate a destination category (see "Adding a Category" on page 519).
- 2 Highlight the source category/subcategory.
- 3 Select the **Copy Category Content** Action listed under the **Category** set of the Actions pane.
- 4 Select the destination category.
- 5 For large categories, you may enable 'Run in Background' to free up the application while the copy is taking place.

History will be accessible to check status.



NOTE Selected **Objects Copied**

- Requirements are copied only if they have the status "Current". Objects marked for deletion, or Proposed changes, for example, are not copied.
- **Requirements** are copied, without history, and, as with all copied objects, are assigned a new requirement identifier.
- Documents are copied and assigned a suffix: "(copy_#)".

Moving Requirements Between Categories

A requirement can exist in only one category at a time.

Organize by Category allows users to search for and then bulk move requirements from one category to another.



NOTE Moving Requirements using drag and drop

Selected objects may be moved between Categories using drag and drop in the categories pane in Home View. A successful move will display a green check. For details see [Categories Pane](#).

To bulk move requirements between categories:

- 1 Select **Organize by Category** from the Administration menu. The **Organize by Category** dialog opens.

- 2 **Look for class:** Select a class in which to search for requirements. If an object was selected when you invoked the dialog, this field will be pre-populated; change it as needed.
- 3 **Filters:** If you saved filters in Quick Search, you can use these filters to search the requirement you wish to move.
- 4 **Manage Categories:** Click this link if you want to create, rename, or delete any categories before proceeding with the move procedure. The Manage Categories dialog opens. See ["Managing Users" on page 506](#).
- 5 **Remember these options:** Select this checkbox to retain the current settings as the default for future invocations of the dialog.
- 6 **Constraints:** As needed, specify criteria to locate the desired requirements. See ["Quick Find and Advanced Search" on page 42](#) and ["Relationship Constraints Tab" on page 51](#).
- 7 **Display Options:** As needed, specify how to display the results. See ["Display Options Tab" on page 53](#).
- 8 **Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog.
- 9 **New Search:** Click this button to clear the current search criteria and results.
- 10 Select the desired requirements in the search results. For multi-selection of requirements, see "Methods for Listing Requirements" on page 100.
- 11 **Category:** Select the category to which you want to move the selected requirements.
- 12 Click the **Move** button.

Valid Actions

The following lists all Valid Actions available in the Dimensions RM Interface.

 Indicates Actions that are NOT recommended for assignment to regular users.

Action	Definition
Administration	
Manage Schema Definition 	The user has the ability to make changes to the Instance Schema. Changes allowed include Classes, Relationships, Workflow, Attributes, Forms, and Calculations.
Team Maintenance 	The user can create, edit, and delete Agile Teams.
User Group Assignment 	The user can assign users to groups.
Attributes	
Update	The user can edit attribute values.
Boards	
Create Public	The user can create public boards and dashboards.

Action	Definition
Categories	
Category Assignment ⓘ	The user can grant or revoke access to the category for groups and users for the category the group or user with this right is assigned to.
Define List Values ⓘ	The user can add, or delete list entries for the category the group or user with this right is assigned to.
FullAccess	The users in the assigned group have instance level permission to move or copy scripts, and traceability reports into other categories, and move requirements between categories, even if they are not in a group that has permissions to the individual categories. For information about assigning groups permissions to individual categories, see "Manage Category Assignment" on page 522. NOTE: To add, delete, rename, or move categories, users must be in the Instance Administrator Group. The FullAccess transaction has no effect on the ability to perform these actions.
Maintain Sub-Categories ⓘ	The user can create, rename, activate, inactivate, or move (by drag and drop) categories under the category to which the user group is assigned.
Classes	
Branch To	The user can Branch requirements.
CMLock	The user can lock class objects for configuration management purposes.
Create	The user can create new objects.
CreateCR	The user can create new change requests for class objects.
Delete	The user can mark class objects as deleted.
ExecuteCR	The user can accept or reject change requests.
Execute Transition	The user can execute any transition of any class.
Execute Transition if Owner	The user can execute any transition if he or she owns the requirement.
Execute Transition if Submitter	The user can execute any transition if he or she submitted the requirement.
Expand	The user can expand class objects.
Link	The user can create generic links to class objects.
Merge To	The user can merge branched requirements.
Read	The user can read class objects.
Remove ⓘ	The user can remove class objects. Remove erases a requirement version from the database, rather than marking it for deletion and maintaining the change as part of the requirement history. This can be a valid choice when items are added incorrectly, but it is not recommended for general use..

Action	Definition
Save	The user can save class objects.
Save If Owner	The user can save class objects if he or she owns them, overriding possible restrictions as far as container or workflow are concerned.
Synchronize To	The user can merge branched requirements.
Undelete	The user can undelete class objects.
Unlock	The user can unlock class objects.
Update 	The user can update objects with a status of "Current." Update modifies a requirement - in place - without maintaining the change in its revision history. This can be useful during the requirement creation phase, but if used throughout the process there would be no history and no ability to report changes or to track trends.
UpdateCR	The user can update an object with a status of "Proposed."
Update If Owner	The user can update owned objects without maintaining the change history. It is reasonable for a user, when creating or even modifying a requirement to make a minor change (e.g., correct a typo) without updating the version history.
UpdateNonCurrent 	The user can update objects where the status is non-current, i.e., not the latest version of the object. This action should only be used in emergencies as it allows a change to history. We recommend that, if such a change is required, grant the permission, use it and then take it away.
Collection	
Associate to a Dimensions CM Project	The user can associate a collection with a Dimensions CM project.
Create	The user can create a new collection.
Create Based on Existing Collection	The user can create a collection based on an existing collection.
Create Baseline	The user can create a baseline from a collection.
Delete	The user can delete collections.
Link	The user can add requirements to collections or remove requirements from collections.
Link Requirement to Dimensions CM Project	The user can add a requirement to a collection that is associated with a Dimensions CM project.
Remove	The user can remove collections.
Remove Baseline 	The user can remove baselines.
Rename Baseline	The user can rename a baseline.
Undelete	The user can undelete collections.

Action	Definition
Update	The user can create/edit alias's and modify parent/child links for a collection.
Documents	
Create	The user can create a new document.
Create Based on Existing Document	The user can create a new document which uses an existing document as a template.
Create Snapshot	The user can create snapshots.
Delete	The user can delete documents.
Delete Snapshot	The user can delete snapshots.
Full Snapshot Access ⓘ	If the snapshot is in a category to which the user has access, the user can read requirements and chapters and add comments, even if they do not have access to the category where the requirements exist. The user does not have access to the snapshot if he or she cannot access the category the snapshot resides in.
Link	The user can add chapters and requirements to a document and edit sub-chapters.
Manage Parent Document	The user can create and manage parent documents.
Remove	The user can remove documents.
Remove Snapshot ⓘ	The user can remove snapshots.
Rename Snapshot	The user can rename snapshots.
Undelete	The user can undelete documents.
Unlock	The user can unlock documents.
Update	The user can edit the root chapter of a document.
Update Properties	The user can modify document properties.
Import/Export	
Export	The user can export requirement objects. To export Documents or reports, the user must have permission to export all of the objects contained within.
Import ⓘ	The user can import requirements and documents. It is recommended that the user understand the import functionality prior to using import tools.
Relationships	
Clear Suspect Links	The user can clear suspect links of one requirement at a time.
Create	The user can create new links for relationships.
Delete	The user can delete links for relationships.
Mass Clear Suspect Links	The user can delete suspect links of one or several requirements at a time.
Modify	The user can change relationship attribute values.
Raise Suspect Links	The user can make a linked requirement suspect.

Action	Definition
Read	The user can look at relationship links.
Remove	The user can remove relationship links.
Undelete	The user can undelete relationship links.
Reports	
Create	The user can create new reports. NOTE: If you do not have Create permission, you can create a new report for testing; however, you cannot save it.
Create Public	The user can create new public reports.
Read	The user can see and execute reports.
Remove	The user can remove reports.
Rename	The user can rename reports.
Update	The user can change reports.

Managing Document Locks

Users can break a document lock under if they have the **Unlock** permission for documents or locked the document himself.

To break locks on documents:

- 1 Select the **Document Locks** action from the **Administration** menu.
- 2 **Unlock All:** Click this button to unlock all locked documents.
- 3 **Unlock Selected:** Click this button to unlock only the selected documents. Ctrl-click to select multiple documents.
- 4 **Refresh:** Click this button to update the display of locked documents.

Managing Requirement Locks

To break locks on requirements:

- 1 Select **Requirement Locks** from the Administration menu.
- 2 If there are locked requirements, the dialog will present the list.

Requirement Locks							
Class	PUID	Title	User	Host	Timestamp	Object ID	Session
Component_Requirements	COMP_000006	Multiline text annotations	 Ryan Forbes	192.168.6.16	30-SEP-2021@15:51:08	150	163300971547
Refresh Unlock Selected Unlock All Close							

- 3 **Unlock All:** Click this button to unlock all locked requirements.
- 4 **Unlock Selected:** Click this button to unlock only the selected requirements. Ctrl-click to select multiple requirements.
- 5 **Refresh:** Click this button to update the display of locked requirements.

Managing Notifications

Dashboards rely on reports to display, on a single screen, Key Performance indicators (KPIs) to inform the organization as to project status and goals. From the dashboard, users can drill down for a more detailed look at a particular category or an individual object. **Notifications** are used to report on changes to those individual objects.

Notifications can be based on ownership, class, state or interest. The product manager may request notification of changes to the text in a business requirement assigned to a release, the analyst responsible for creating a set of requirements may elect to be notified should any of those requirements change, or the QA lead may request notification of changes to a test case.

Notifications are created and managed by the Instance Administrator using the Notification Rule dialog, see ["Notification Rules" on page 531](#).

Users may choose to opt in or out of Notifications (see ["Enabling and Disabling Notifications" on page 63](#)).

Notification Rules

Users who need to, selectively, follow changes to specific requirements may use the Follow action, see [Notification of Change with the Follow Action](#). For those who would like to see changes to a set of objects, for example, all high priority items assigned to the release, may set elect to enable the notification rules described below.

Users may choose to opt in or out of Notifications (see ["Enabling and Disabling Notifications" on page 63](#)).

The instructions below describe the creation of a Notification. Existing notifications may be copied, using the **Copy** tab, or edited, using **Edit**.

There are two types of Notification Rules:

Public Notification Rules are created by the Instance Administrator for access by members of the designated Groups. To define and/or update public notifications select **Manage Notifications** from the **Administration Menu**.

Private Notification Rules can be created by any user of Dimensions RM. To define and/or update private notifications select **Notifications** from the **User Menu**.

To Create or Edit a Notification:

Click on New to access the New Notification Rule dialog.

Select a rule and click on the **Edit** button to modify an existing rule.

General Tab:

Enter the notification **Name**

Select the **class** from the drop-down list.

If Administrator created **Public Notification**:

Select the **User Group(s)** who may access/apply the rule.

Constraints and Triggers Tab:

The following describes the basic constraint types, with sample triggers employed to show how requirements or attributes within requirements are monitored for change:

When Object Created by me is modified reports on changes to the item, Requirement or Chapter, created by any user who has activated this notification rule. This selection requires no further constraints, but should include, on the **Trigger** tab, one or more attributes to be monitored.

For example, if the attributes selected on the Trigger tab include Title and requirement statement (description), a notification is sent to the original creator only when either is changed.

When Attribute has Value requires the selection, on the constraints tab, of one or more attributes and the values used to identify the requirements to be watched. The Trigger tab lists the values that, when modified, will trigger the notification.

For example, the goal may be to report changes to the requirement statement (description) for requirements with a high priority, assigned to a particular release package. In which case, the administrator would choose the following:

From the Constraint tab:

Click on the small blue plus sign to select the Priority, assign a value of High

Click on the small blue plus sign to select the Release attribute, assign the relevant content.

From the Trigger tab:

Click on Monitored Attributes button, highlight the Requirement Statement and move it to the right.

When comment is added and Attribute has Value requires the selection of an attribute, as described above, together with the value used to constrain the notifications send when a comment is added to the requirement. This selection needs no triggers.

Based on Workflow requires that the user identify the value of the workflow state at which notifications will be raised, together with the triggers that will initiate the notification. For example, the goal may be to report changes to the requirement statement (description) for objects in the **Approved** state.

Display Options: The Display Options consist of the notification subject, and the text. See ["Notification Display Options" on page 532](#).

Notification Display Options

The Display Options consist of message Subject and Text.

The Subject typically contains the class and Requirement ID. A example is provided with each new rule.

The Text box is populated by first clicking inside the box and then entering relevant notification text. The Attributes drop-down lists attributes available to the selected

class; choosing attributes from this list will include in the text both display name and content.

For example, given the following Display Options:

A sample **subject** line is provided: "Notification of Customer Requirement <#Rqmt ID#>". You may choose to just change the requirement class (e.g., Customer to Functional) or add additional text.

Click inside the **text** box to construct the notification text. Include free-form message text, including data from the Attributes drop-down list. Once the message is complete, click on the **Save (Update** if changing) button and test the rule.

Edit Notification Rule

GENERAL CONSTRAINTS TRIGGER DISPLAY OPTIONS

Subject

Notification of Functional Requirement <#Rqmt ID#> Workflow State: <#STATE#> has been changed

Text

Attributes **B** *I* A

Requirement <#Rqmt ID#>, listed with Workflow State: <#STATE#> and Planned for Release: <#PLANNED_FOR_RELEASE#> has been changed.
 Title: <#TITLE#>.
 Description: <#TEXT#>

Figure 12-1. Display Options: Notification Message

Attribute Definition

An attribute is a property used to manage each of the characteristics associated with the various object types defined using RM Classes.

User (custom) attributes refer to those whose content is maintained by the requirement management teams, whether they are defined by default with the class (e.g., Title, Description) or by the Instance Administrator.

System (implicit) attributes are defined and maintained by Dimensions RM. These attributes manage, among other things, who did what and when.

The following sections describe the definition of user (custom) attributes, their types and properties. For information concerning the review and modification of implicit attributes, including the Class Prefix, see [Defining a Class](#).

Accessing Attribute Settings:

- 1 From the Administration menu, select **Attribute Settings**.
- 2 From the left pane select the **Attribute Definition** tab.

If either **Attribute Settings** or **Schema Definition** are being edited by another user, the **Break Lock** dialog box is displayed, this dialog will identify the user currently holding the lock. For details see ["Opening and Unlocking the Instance Schema" on page 568](#).

Adding an Attribute to a Class:

- 1 From the **Class** box, select the class to which you want to add the new attribute.
- 2 Click **New** and select the desired attribute type from the list.

For information concerning attribute types, including the information required to include each type, see ["Attribute Types" on page 534](#).

For information concerning attribute properties, see ["Attribute Properties" on page 535](#).

Additional information concerning Attributes:

Hiding attributes when they are no longer of value - ["Hiding an Attribute" on page 536](#).

Deleting unused attributes - ["Deleting an Attribute" on page 537](#).

Attribute Types

The following sections describe each of the available attribute types, with links to associated definition detail:

Icon	Description
	Alphanumeric Attribute A single line of text up to 1000 characters.
	Date Attribute An attribute used to store user process related timestamps in a format (including length, default, minimum, and maximum values) defined using presets.
	File Attachment Attribute A attribute designed to provide a method to associate one or more files with an object of any class.
	List Attributes A list of values presented for selection. The methods used for display and selection are configurable.
	Group Attribute A set of inter-dependent list attributes. Each list limits the choices available to the user <i>depending</i> upon the selections made in a previous level

Icon	Description
	Lookup Attribute Provides a facility to link one attribute to another in order to access its values.
	Numeric Attribute Attribute defined to hold numeric values, such as estimated effort. The content can include decimals.
	Text Attribute An attribute type that can hold up to 64 KB of alphanumeric text. It is suitable for long descriptions, and can be HTML enabled.
	URL Attribute Attribute designed to support the management of URLs.
	User Attribute An attribute defined to provide a method for user assignment. A single user attribute can contain all users, members of one or several groups or individual users.

Attribute Properties

The common attribute properties are displayed for all attribute types. The following table describes their function.

Property	Description
Display Name	The name of the attribute that will be displayed in Dimensions RM dialogs. Please consider the naming restrictions when specifying the display name. For details about naming restrictions, "Naming Conventions for Attribute Display Names" on page 611 .
Attribute Name	The internal name of the attribute, which is populated automatically for a new attribute based on the display name if no value is provided. Please consider the naming restrictions when specifying the attribute name. For details about naming restrictions, see "Naming Conventions for Attribute Names" on page 611 .
Description	Enter a description which explains the purpose of this attribute.
Attribute Mandatory	Whether you are required to specify values for the attribute during the information storage or capture process.
Attribute Editable	Whether you can edit the attribute values. Conversely, making an attribute non-editable is useful when no further changes to the attribute are allowed.

Property	Description
Force Unique Value Within Category	Check Force Unique Value to require that the value entered for this attribute is unique. Use Case 1: A Numeric Attribute managing labels. Use Case 2: A text attribute, e.g., Title, that must be unique or, if checked, must be unique within a category. For most other attribute types, this selection is grayed out.
Display For Entry	Whether the attribute will be displayed in forms and list views of object content. If unchecked, the attribute will not be presented in these views. This is generally used for security.
Populate on Copy	Enabling this option for an attribute indicates that its content will be included when a new object is created using the Copy action.
Populate on Mass Copy	Enabling this option for an attribute indicates that its content will be included when new objects are created when copying multiple requirements (mass copy) using the Copy action.
Populate on Create and Link	Identically named attributes will be pre-populated when using Create New & Link executed from Actions pane or from the Link section of an open object. To be applied, this option requires that both this Attribute Property be enabled as well as the Relationship Property Populate Attributes on Create and Link (see "Relationship Properties" on page 580). This allows for classes to be prepopulated based on the relationship.
Change raises Suspicion	The option to raise suspicion on change may be set for any custom attribute as well as for many system attributes, including: • Workflow State • Owner • Category Once enabled, any replace action on this attribute will mark linked objects as Suspect (see "Transfer Rules" on page 580)

Hiding an Attribute

Hidden in support of Process:

Dimensions RM defines some attributes as hidden because the process for populating their content is controlled by the software, for example glossary entries (see ["Glossary Tab" on page 327](#)). Although it is possible to expose a hidden attribute for bulk import as in the case of the Glossary, ["Creating and Editing Workflows" on page 589](#).

Hidden through Lack of Use:

Administrators may choose to hide attributes because the team has determined that they add no value. The attribute could be deleted, but there is always the concern that useful information may once have been stored in that attribute. The answer: Hide it! A hidden attribute, can always be exposed.

To hide an attribute from display or change, clear all settings:

- 1 From the **Administration** menu, select **Attribute Settings**.
- 2 In the left pane, select **Attribute Definition**.
- 3 From the **Class** box at the top of the dialog, select the class holding the attribute to be hidden.
- 4 Select the attribute you want to hide.
- 5 Clear the check boxes controlling all aspects of display, copy and populate, as shown below.
- 6 Click **OK**.

☐ Attribute Mandatory	☐ Attribute Editable
☐ Force Unique Value	☐ Display for Entry
☐ Populate on Copy	☐ Populate on Create And Link
☐ Change raises Suspicion	

Deleting an Attribute

There are times when the team realizes that they might not need all those attributes defined when the process was initiated. Some were never used, while some slowed the input process down because team members were trying to figure out how to use them. Unused attributes can be deleted, those attributes occasionally populated may be hidden (see ["Hiding an Attribute" on page 536](#)) while the team decides if there is anything worth saving.

To delete an attribute from a class or relationship definition:

- 1 From the **Administration** menu, select **Attribute Settings**.
- 2 In the left pane, select **Attribute Definition**.
- 3 From the **Class** box, select the class to which you want to delete the attribute.
- 4 Select the attribute you want to delete from the definition.
- 5 Click the **Remove**.
- 6 Click **OK**.



NOTE Implicit Attributes

Implicit attributes can never be deleted.

Alphanumeric Attribute

An alphanumeric attribute represents one line of alphanumeric text, such as the title of an acceptance test. The maximum (1000) and display lengths are configurable.

The screenshot shows the 'Attribute Settings' window for an alphanumeric attribute. The window has a dark blue header with the title 'Attribute Settings' and a help icon. Below the header is a sidebar with navigation options: 'List Attributes', 'Category Values', 'Calculations', and 'Forms'. The main area is titled 'Business_Requirements' and contains a list of attributes. The 'TITLE' attribute is selected, and its settings are displayed on the right. The settings include a 'Description' field with the text 'Condensed object description', a 'Display Name' field with the text 'Title', and an 'Attribute Name' field with the text 'TITLE'. There are checkboxes for 'Display for Entry', 'Attribute Editable', 'Attribute Mandatory', 'Force Unique Value', 'Within Category', 'Populate on Copy', 'Populate on Mass Copy', 'Populate on Create And Link', and 'Change raises Suspicion'. The 'Maximum Length' is set to 1000 and the 'Display Length' is set to 50. At the bottom right, there are 'Save' and 'Close' buttons.

Figure 12-2. Alphanumeric Attribute Definition

The alphanumeric attribute properties are described in the following table.

Property	Description
Maximum Length	The maximum length of the value allowed for the attribute. The valid range is 1 to 1000 characters.
Display Length	The default number of characters to display for this attribute. The valid range is 1 to 1000 characters.
Advanced Settings	
Minimum Value	A minimum value that can be associated with the attribute, if any. Dimensions RM performs a string comparison on the minimum and maximum values. For example, if you enter a minimum value of A and a maximum value of C, Dimensions RM will inform you that a value of D is out of range.
Maximum Value	A maximum value that can be associated with the attribute, if any. Dimensions RM performs a string comparison on the minimum and maximum values. For example, if you enter a minimum value of A and a maximum value of C, Dimensions RM will inform you that a value of D is out of range.
Default Value	A default value for initial instances of the attribute, if required.
Case	Whether the attribute value should be displayed in upper case, lower case, or sentence (mixed) case.

Date Attribute

A date attribute can have values that are based on user-defined formats. A date attribute, for example, could be used for test dates.

The screenshot shows the 'Attribute Settings' window for a 'Release Date' attribute. The left sidebar contains a 'List Attributes' menu. The main panel has a 'Business_Requirements' header. Below it, a list of attributes includes 'Description', 'New' (highlighted), 'Priority', 'Reason for change', 'Release Date', and 'Title'. The 'Release Date' attribute is selected, showing its configuration. The 'Attributes' section has an 'implicit' checkbox. The 'Display Name' is 'Release Date' and the 'Attribute Name' is 'RELEASE_DATE'. The 'Description' is 'The expected release date of the object'. The 'Display Format' is 'DD-MON-RRRR'. There are checkboxes for 'Display for Entry', 'Attribute Editable', 'Attribute Mandatory', 'Force Unique Value', 'Populate on Copy', 'Populate on Mass Copy', 'Populate on Create And Link', and 'Change raises Suspicion'. At the bottom, there are 'Save' and 'Close' buttons.

Figure 12-3. Date Attribute Definition

The date attribute properties are described in the following table.

Property	Description
Display Format	The date format applied for this attribute.
Default Value	A default value for initial instances of the attribute, if required.
Current Date	If enabled, uses the current server date (and time if defined for the attribute) as a default value.
Advanced Settings	
Maximum Length	The maximum length of the value allowed for the attribute. The valid range is 1 to 1000 characters.
Display Length	The default number of characters to display for this attribute. The valid range is 1 to 1000 characters.
Minimum Value	A minimum value that can be associated with the attribute, if any.
Maximum Value	A maximum value that can be associated with the attribute, if any.

File Attachment Attribute

This attribute allows users to attach files to requirements. A customer submission, for example, may be attached to a Use Case, or an image attached to a Test Case. Multiple File Attachment attributes may be assigned to a single class.

The display name for the file attachment attribute can match its expected content. For example, Customer Use Case, *Test Case Image*, or, a *Business Justification* on a Marketing Requirement. Users then use RM Browser to add, view, or download the file(s).

For more information about using RM Browser to view and manage file attachments, see ["Working with File Attachments" on page 169](#).

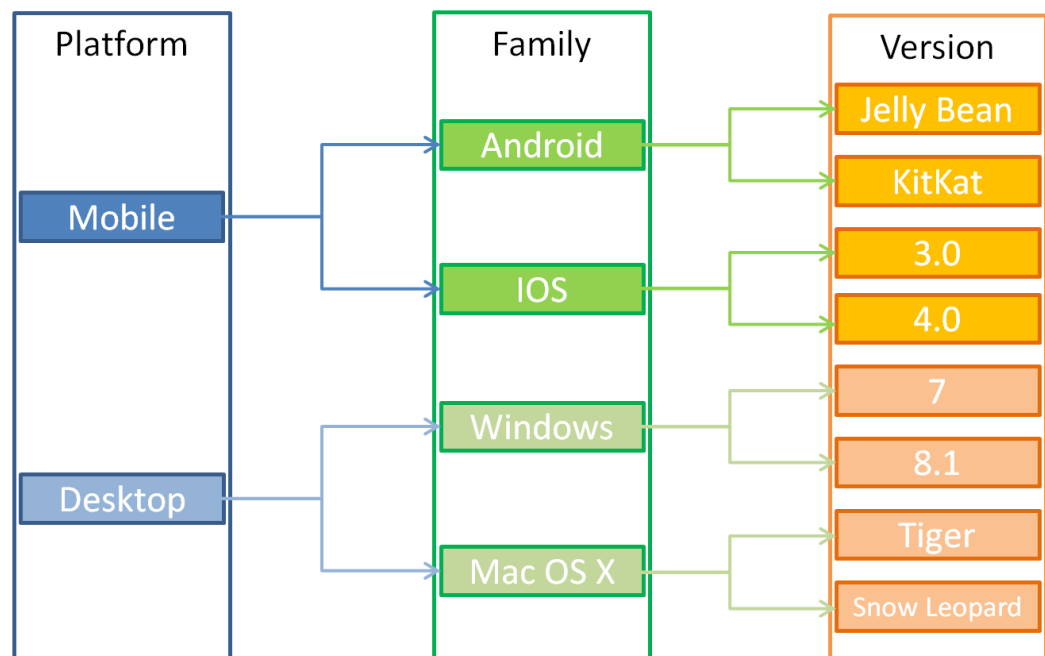
In addition to the standard [Attribute Properties](#), *Allow Multiple Selections* may also be checked to allow more than a one file to be associated with a file attachment attribute.

Property	Description
Allow multiple selections	Whether the attribute can hold one or multiple files. ■ Enabled: The attribute can hold multiple files. ■ Disabled: The attribute can hold a single file.

Group Attribute

A group attribute allows users to select values like a list attribute. But unlike a simple list attribute, a group attribute is composed of a series of sub-attributes. These sub-attributes are called **group members**.

The following displays a simplified representation of the group attribute **Operating System** defined in RMDEMO's **Tests** class.



The group attribute contains the group members **Platform**, **Family**, and **Version**. By restriction, you can define which values the user will see when selecting a value. The selection of the **Platform** group member defines the values of the **Family** group member. The selection of the **Family** defines the values of the **Version** group member.

Each group member contains its own list of values which may be different depending on the selected value of the previous group member.

Defining a Group Attribute;

The group attribute definition begins by choosing **Group** when adding a new attribute (see ["Attribute Definition" on page 533](#)).

The attribute must be named, in the example used the display name is: Operating Systems.

Adding Managing Members (Sub-Attributes)

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 Click **+** . This opens the **Properties for NEW member** dialog.
- 3 Type the member name into the **Display Name** box. If desired, specify a text describing the member into the **Description** box.
- 4 Click **OK**.

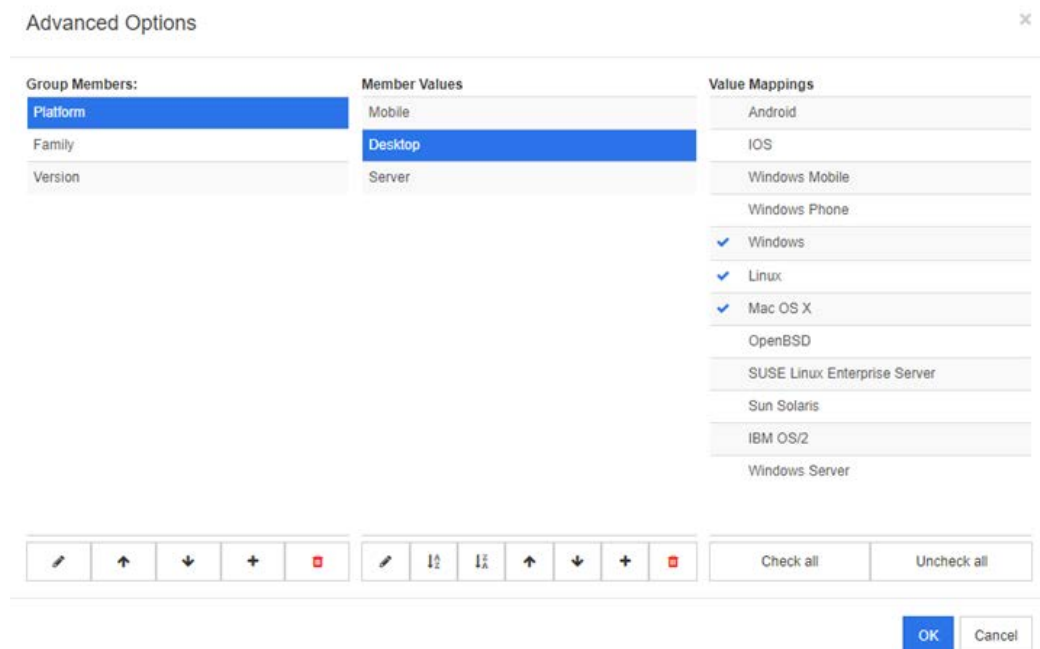


Figure 12-4. Group Attribute Definition

Deleting Members (Sub-Attributes)

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 Select the member you want to delete.
- 3 Click **✖**.

Ordering Members (Sub-Attributes)

The first attribute in the group is the parent of the second, and the second is the parent of the third, etc. To reorder the attribute members to reflect the dependency logic that you want to enforce do the following:

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 Select the member you want to move.
- 3 Click  or .

Adding Member Values

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 From the **Group Members** list, select the member for which you want to add a value.
- 3 Click . This opens the **Add Value** dialog.
- 4 Enter the new value into the **New value name** box. The value must be unique within the group member.
- 5 Click **OK**.
- 6 If you wish to change the position of a value, select it and click  or  until the value is at the desired position.

Renaming Member Values

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 From the **Group Members** list, select the member for which you want to rename a value.
- 3 Select the value you wish to rename.
- 4 Click  to open the **Rename Value** dialog.
- 5 Enter the new value into the **New value name** box. The value must be unique within the group member.
- 6 Click **OK**.

Defining Dependencies

By defining dependencies you specify which values are available in a sub-attribute when a user selects a value in a parent attribute.

To define the dependencies do the following:

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 From the **Group Members** list, select the parent attribute (e.g. Platform).
- 3 From the **Member Values** list, select a member value (e.g. Server).
- 4 Click the **Value Mappings** list.

Saving your Changes

- 1 Click **OK** to close the **Advanced Options** dialog.
- 2 Click **Save** to save all your attribute definition changes.

List Attributes

The **Attribute Definition** Dialog accessed through **Attribute Settings** from the **Administration** menu, allows users create **List Attributes**, as well as to add or modify content in existing attributes.



NOTE Adding Values to Existing List Attributes

The List Attribute Tab, accessible from the Attribute Settings dialog, allows users to add values to existing Attributes, see ["Adding a Value to an existing List Attribute" on page 548](#).

Adding a List Attribute to a Class:

- 1 From the Administration menu, select **Attribute Settings**
Select the **Attribute Definition** tab.

If either **Attribute Settings** or **Schema Definition** are being edited by another user, the **Break Lock** dialog box is displayed, this dialog will identify the user currently holding the lock. For details see ["Opening and Unlocking the Instance Schema" on page 568](#).

- 2 From the **Class** box, select the class to which you want to add the new attribute.
- 3 Click **New** and select **List Attribute** from the list.

- 4 Enter the Display Name, e.g., TDR Component Type, and a description.
For Attribute Property Detail, scroll down to [List Attribute Properties](#).

Attribute Settings

Attribute Definition

Component_Requirements

Attributes:

☐ implicit

Filter...

CM Associations short

Component Manager

Dev Effort

Effort Estimation

File Attachment

Label

Reason for change

+ New Remove

Copy

Display Name

TDR Component Type

Attribute Name

TDR_COMPONENT_TYPE

Description

Transferable Directive Resource for high-level connections.

☒ Display for Entry

☒ Attribute Editable

☐ Attribute Mandatory

☐ Force Unique Value

☒ Populate on Copy

☒ Populate on Mass Copy

☒ Populate on Create And Link

☒ Change raises Suspicion

Advanced Options

Save Close

Figure 12-5. A List Attribute defined with default properties.

5 Choose Advanced Options

- 6 Click , to add a new value.

Value: Enter the list Value.

Description: A few words to help users to locate the correct value using [Find and Select List Values](#).

7 Add to All Categories

If the new value should NOT be available from all categories, uncheck the box.

To assign the value to selected categories see "[Category List Attribute Values](#)" on page 557

- 8 Click **OK**.

- 9 Continue with 6-8 until complete. More values can always be added later.

List Attribute Properties

List attributes are configurable. They present a list of values for user selection, and that list can be presented with tags or color coding. Priorities might be defined as Critical, High, Medium and Low with a default set or require that users set the priority before saving the requirement.

Property	Description
List Values	A list of possible alphanumeric values, spaces permitted, that have been defined for the list attribute. A check in the box to the right of the value indicates this is a default value or values for multiple selection lists.
Allow multiple selections	Allows the selection of more than one value from the list; if this box is not checked selection is limited to one.
Assignment Box	Only available when Allow multiple selections is selected and Tag list is not selected. Enabling this option replaces a single list with two lists which allow adding/removing entries by using  and  .
Tag List 	Attribute values are displayed as "tags". Enabling this option means that each user with write access can add an alphanumeric values, spaces permitted, to the attribute list CAUTION! The addition of tag entries is a schema change. If a user adds tags while the Instance Administrator, for example, has the schema definition open for change, the tags added by the user will not be saved.
Show as checkbox	The list attribute is displayed as checkbox or radio button. For further details, see " Configuring List Attribute Selection " on page 547.

Property	Description
Show not Initialized	If 'Show as checkbox' is selected, you may choose to the option Not Initialized for a radio button or the text Not Initialized for a checkbox. For further details, see "Configuring List Attribute Selection" on page 547.
Color Coded Labels	As shown in Figure 12-6 , "List Attributes may be shown as a color-coded label" , list attributes may be color coded and displayed a labels.

Advanced Options

List Attribute Values

Passed	[Blue Label]	[X]
Failed	[Red Label]	[X]
Passed with deviations	[Orange Label]	[X]
Executed	[Cyan Label]	[X]
Blocked	[Purple Label]	[X]
Not Executed	[Blue Label] ✓	[X]
Not Planned	[Grey Label]	[X]

☐ Allow multiple selections
 ☐ Assignment Box

☐ Tag List

☐ Show as checkbox

OK Cancel

Figure 12-6. List Attributes may be shown as a color-coded label

Always, when modifying content from Advanced Options:

Click **OK** to **Save** changes and Close.

The following describe the List Attribute Details:

["Ordering List Attribute Values" on page 546](#)

["Removing or Deleting a List Attribute Values" on page 546](#)

["Set a Default List Attribute Values" on page 546](#)

["Excluding Value Setting\(s\) from Raising Suspicion" on page 546](#)

["Configuring List Attribute Selection" on page 547](#)

Choose the presentation: Check boxes, radio buttons, Yes-No Checkbox, Three-State Yes-No Checkbox

["Adding a Value to an existing List Attribute" on page 548](#)

Ordering List Attribute Values

Ordering Values Alphabetically:

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 To sort ascending, click .
- 3 To sort descending, click .

Ordering Values manually:

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 Select the value you want to move.
- 3 Click  or .

Removing or Deleting a List Attribute Values

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 Select the value you want to delete.
- 3 Click the Trash can and one of the following will occur:
 - If the selected attribute value is not used in any requirement, it will be **Removed**.
 - If the selected attribute value is used in any requirement, a dialog is raised offering options to **Delete** or **Remove** the attribute value.

Option 1 - Deleting (recommended) an attribute value:

- The value remains visible in objects to which it was assigned, but it can no longer be selected for assignment.
- The value remains available for selection in all dialogs which support filtering or searching, for example: Quick Search or the attribute constraints tab in report creation.

Option 2 - Removing (NOT recommended) This means:

- The value remains visible in objects to which it was assigned.
- The value will NOT be available for selection in any dialog.

If you want to replace an old/obsolete value in requirement versions, see ["Changing a List Value on Existing Data" on page 547](#).

Set a Default List Attribute Values

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 Select the proposed default value.
- 3 Click the Check icon.

Excluding Value Setting(s) from Raising Suspicion

- 1 Click **Advanced...** to open the **Advanced Options** dialog.
- 2 Select the value to be excluded from raising suspicion.

- 3 Click the Suspect icon.

Changing a List Value on Existing Data

This section describes a suggested best practice for changing a list value that has been in use and thus exists in non-current requirement versions. It presupposes that you need to replace an obsolete list value in non-current versions and that an audit trail must be maintained.

- 1 Do a backup of the instance, including security.
- 2 Add the new list value to the instance schema. (Do not remove the old value.)
- 3 Ensure that you have both Update and Update Non-Current access to the class that includes the modified list.
- 4 Create a report that lists:
 - PUID
 - Object_ID
 - The relevant list field with the obsolete value
- 5 Save the report as CSV.
- 6 Edit the CSV to change the obsolete value to the new value.
- 7 Add a **Reason for change** column and populate it with whatever statement satisfies your audit requirements. (This will overwrite existing **Reason for Change** entries.)
- 8 Use CSV Import in **Update** mode to match on Object_DF and map the list and reason for change attributes.
- 9 Verify that the data was correctly imported.
- 10 Remove your Update and Update Non-Current access to the class (assuming you added these just for this procedure).
- 11 Remove the old list value from the instance schema.

Configuring List Attribute Selection

The configuration of a list attribute as check box(es) or radio buttons depends on the overall configuration of the list attribute and the options **Show as checkbox** and **Show not Initialized**. Note that **Show not Initialized** is not always available.

Configuring a Yes-No Checkbox

A Yes-No checkbox has two values and does not show any additional text apart from its attribute name. Basically the attribute name asks an implied question, for example, Beta Test, Network Related.

To create the Yes-No checkbox:

- a Create a list attribute and specify two values in the list, e.g. Yes and No.
- b Select the **Show as checkbox** option.
- c From the **Checked value** box, select the value you want to use with the selected state of the checkbox, e.g. Yes.

The second list value (e.g. *No*) will automatically be used for the clear state of the checkbox.

- d Select the *Yes* or *No* (e.g., *No*) value and click .

Click **OK**.

Configuring a Three-State Yes-No Checkbox

A Yes-No checkbox has two values and does not show any additional text apart from its attribute name. A three-state checkbox provides an additional state, which is **Not Initialized**.

To create a Yes-No checkbox:

- a Create a list attribute and specify two values in the list, e.g. *Yes* and *No*.
- b Select the **Show as checkbox** option.
- c Select the **Show not initialized** option.
- d From the **Checked value** box, select the value you want to use with the selected state of the checkbox, e.g. *Yes*. The second list value (e.g. *No*) will automatically be used for the clear state of the checkbox.
- e Click **OK**.

Configuring Multiple Checkboxes or Radio Buttons

When a list has more than 2 values, the list will show either radio buttons or several checkboxes. If the list supports only single value selection, the list will show as radio buttons. For multiple selection, the list will show checkboxes.

- a Create a list attribute and specify three or more values in the list.
- b To allow selection of more than one value, select the **Allow multiple selections** option.
- c Select the **Show as checkbox** option.
- d If desired, select the **Show not initialized** option.
- e Click **OK**.

Adding a Value to an existing List Attribute

- 1 Select a class from the drop-down provided. The List attributes defined within the class will be displayed.
- 2 Choose the List Attribute to be modified. The List Values will be displayed.
- 3 Click . This opens the **New Value Name** dialog.
- 4 Type the value into the box.
- 5 **Add to All Categories**

If the new value should NOT be available from all categories, uncheck the box.

To assign the value to selected categories see ["Category List Attribute Values" on page 557](#)

- 6 Click **OK**.

From this dialog, the List Values may be sorted, individual values may be moved up or down, added, deleted, or set as the default.

Lookup Attribute

A lookup attribute allows users to relate an attribute to another object in order to access, and to share, its information. The relationship may be created using one or multiple values depending on the configuration, and may reference a PUID (requirement ID) or Title.

For example, using a lookup attribute named "release" to connect requirements of any class to a specific object in the release class ensures access to the complete definition of the release, as well as its status and schedule.

Stakeholder or customer information may also be related and accessed in the same way.

The properties are described in the following table:

Property	Description
Class	The class to be related (e.g., Customer Request to Release).
Select by	The attribute that provides the values for the list.
Allow multiple selections	Allows more than one relationship to be included in the Lookup. If this box is not checked, only one object may be selected from the list provided.
Assignment box	Only available when Allow multiple selections is selected. Enabling this option replaces, in the class form, a single list with two columns: left side possibilities, right side items selected. Adding or removing entries uses  and  .
Create Corresponding Links	Check this box to create a link, in addition to the Lookup, between the base and related class. Please note that if the lookup is modified the link will be removed. The removal will occur even if the link was added manually rather than in conjunction with the Lookup.

Attribute Definition

Functional_Requirement

Attributes:
☐ implicit

Filter...

- Approver
- Attachment
- Author
- Beta Test needed
- Calculated Effort
- Description
- Dev Effort
- Function
- Planned for Release**
- Priority
- Spent Effort
- SW Component
- Tag
- Test Effort
- Title

+ New Remove Copy

Display Name
Planned for Release

Attribute Name
PLANNED_FOR_RELEASE

Description
This lookup attribute enables the creation of a relationship from a functional requirement to one or more releases selected.

☒ Display for Entry
☒ Attribute Editable
☐ Attribute Mandatory
☐ Force Unique Value
☐ Allow multiple selections

☒ Populate on Copy
☒ Populate on Mass Copy
☒ Populate on Create And Link
☒ Change raises Suspicion
☐ Assignment Box

Class
Releases

Select by
Release

☒ Create Corresponding Link(s)
FR_REL

Save Close

Figure 12-7. Creating a Lookup Attribute: Planned for Release will link to Release.

Numeric Attribute

A numeric attribute accepts only numeric values, such as a reference number, the estimated development effort or test duration time. The value can include a decimal point. The numeric attribute properties are described in the following table.

Property	Description
Maximum Length	The maximum length of the value allowed for the attribute. The valid range is 1 to 1000 characters.
Display Length	The default number of characters to display for this attribute. The valid range is 1 to 1000 characters.
Advanced Options	
Minimum Value	A minimum value that can be associated with the attribute, if any.
Maximum Value	A maximum value that can be associated with the attribute, if any.
Default Value	A default value for initial instances of the attribute, if required.

Property	Description
Duration may include padding	As needed: Days {dd:2} Hours {hh:2} Minutes {mm:2} For example, to include each unit of time: Days {dd:2} Hours {hh:2} Minutes {mm:2}
Hours Per Day	The number of hours used to constitute a person-day, typically the length of the organization's work day.

If Relying on a Selected Unit of Time

The values used for attributes such as Development or Test Effort may be expressed in days or fractions of days, minutes, or hours. A consistent unit of time should be used, and the unit of time used should be clear to the team. We recommend that the selected unit should be stated in the attribute description, so that it will be displayed when a user hovers over the attribute.

Using Show as Duration

Checking **Show as Duration** in the Attribute Definition, Advanced Options dialog allows the administrator to define the specific unit of time used for duration. A combination of days, hours and minutes can be used, or, depending on the attribute measured, simply hours and minutes. The duration can be used in calculations. We recommend using duration consistently in both input to the calculation and the calculation itself.

The Hours per Day is used to understand the length of the work day applied in calculations. Should the sum of 7 hours of development effort and 3 hours of test effort be expressed in hours, or in 1 day, 2 hours.

For Calculated attributes, the padding clarifies the display:

Calculated Effort:

Days: 008 Hours 06 Minutes 52

Given the numeric attributes Development Effort and Test Effort, with a Calculated effort showing the sum of the two:

- **Development Effort:** Days {dd:2} Hours {hh} Minutes {mm}
- **Test Effort:** Hours {hh} Minutes {mm}
- **Calculated Effort:** Days {dd:3} Hours {hh:2} Minutes {mm:2}

Advanced Options

Minimum Value

Maximum Value

Default Value

☒ Show as Duration
 Days: {dd:3} Hours {hh:2} Minutes {mm:2}

Hours per Day

8

OK

Cancel

Text Attribute

A text attribute is a text block (up to 64 Kb) that can span more than one line. It is suitable for long descriptions, such as the detail for a design or test case.

The text attribute properties are described in the following table.

Property	Description
HTML Formatting	A check box that allows you to specify whether this text attribute is enabled for HTML formatting. When you edit an HTML-enabled text attribute in RM Browser, a special HTML edit control is displayed in place of the normal text area. NOTE: The HTML Formatting property cannot be disabled in the Chapter class.
Append Only	If enabled, the text the user enters into the text box does not replace the current text, but added to the current text. The history is shown above the associated text box.
Insert Newest First	If enabled, new text is placed before any existing text. If disabled, new text is placed after any existing text.
Advanced Options	
Default Value	A default value for initial instances of the attribute, if required.

URL Attribute

A URL attribute can hold one or multiple URLs. Clicking the URL opens it in a new tab or window of your web browser.

When using the default web forms, the URL attribute(s) will be listed on the Attachment tab.

The URL attribute supports the following settings:

Property	Description
Mode	Single: The URL attribute can only hold one URL. Multiple: The URL attribute can hold several URLs.
Validation pattern	Specifying a validation pattern ensures that the URL can be tested. The validation pattern must be a regular expression for the JavaScript programming language. The following samples are provided in the Presets drop-down list: • <code>^(http[s]? ftp):\\/(.*)</code> The URL must use either the HTTP, HTTPS or FTP protocol. • <code>^https:\\/\\/www\\.opentext\\.com\\/(.*)</code> The URL must use the HTTPS protocol and the server must be www.opentext.com.
Limit count to	This option is only available if Mode is set to Multiple . Select this option and specify any value higher than 0 to define the maximum number of URLs the attribute can hold.
Placeholder	Specify a text sample to inform users about the expected format.

User Attribute

The RM Login identifier is a system attribute used by Administrators to assign access rights through instance and group membership. This attribute is also used in the schema definition to create and populate roles, e.g., Designer, Analyst, Reviewer, Tester. All instance users, all users in a group or selected individuals may be available for role assignment.

To list all users, follow these steps:

- 1 Select option **All instance users**.
- 2 Click **OK**.

To list users of one or several groups, follow these steps:

- 1 Select option **All Users from selected Groups**.
- 2 Select the groups you want to be included in the list.
- 3 Click **OK**.

To list individual users, follow these steps:

- 1 Select option **Specific Users**.
- 2 Select the users you want to be included in the list.
- 3 Click **OK**.

Selection Mode

Property	Description
Allow multiple selections	If selected, allows multi-selection. If cleared, allows single selection.
Individual users	Only users can be selected.
Groups and specific users	Groups selected in the All users from selected groups list and users specified in the Specific users list can be selected.
Groups, group members and specific users	Groups selected in the All users from selected groups list , users who are members of the selected groups and users specified in the Specific users list can be selected.
Teams	Only teams can be selected.

Specifying Default Values

To specify a group or user as a default value, do the following:

- 1 Click the **Set Default**. This opens the **Find & Select User** dialog.
- 2 Select the user or group you want to use as a default value. The **<Current User>** entry uses the name of the user who edits the requirement as a default value.
- 3 Click **OK**. Note that the default value is not used until you save the schema definition.

PUID Attribute

The implicit attribute PUID (Persistent Unique Identifier) is used to identify each object (requirement, test case, Defect, Comment, etc.). Referred to as the Requirement ID, the number, assigned with a class related prefix, maintains associations with the object throughout each version of its life.

The PUID attribute properties are described in the following table.

Property	Description
PUID format	Any string of characters and then <#>. The <#> variable is replaced by the PUID number. NOTE: If you want # to appear in the PUID as a character, type it in the string of characters without the brackets.
Number style	The style of numbering to use for the PUID.
Next	The next PUID number to be assigned.

Property	Description
PUID Length	The number of numbers that can replace the <#> variable.
Pad with leading zeros	Adding padding to the PUID number ensures consistency in display, as well as the ability to use filters such as greater-than, less-than, and between when filtering a list. The default padding is 5, which means that a Functional Requirement (prefix FR) will extend the initial ID to a length of 5: FR_00001. The length of the PUID padding later in the life of the class.

Managing List Attribute Values

A **list attribute** provides the ability to assign a set of selectable values to an attribute. Attributes like priority and severity are often defined using list attributes, as are lists of releases or requirement sources. List attributes make input easier, while ensuring consistency.

From **Administration, Attribute Settings** select the **List Attributes** tab

- List Values, including one to make the requirement free from suspicion, can be added, and/or default settings modified - ["Adding List Values" on page 555](#).
- Delete or Remove List Values - ["Removing or Deleting a List Attribute Values" on page 546](#)
- Reorder List Values - ["Ordering List Values" on page 556](#).
- Changing List Values in Existing Data - ["Changing a List Value in Existing Data" on page 556](#)

Adding List Values

To add a list value to an existing List Attribute, do the following:

- 1 From the **List Attributes** tab select the Class containing the List Attribute.
- 2 Select the relevant List Attribute.

- 3 To Add a value Click . This opens the **New Value Name** dialog.
 - a Enter the new value
 - b Click **OK**..
- 4 **Add to All Categories**

If the new value should NOT be available from all categories, uncheck this box.

To assign the value to selected categories see ["Category List Attribute Values" on page 557](#).
- 5 To modify the new entry or any selected list entry:
 - a Select a List Entry
 - b Click  to make the selected entry the default.
 - c Click  to disable the raise suspect calculation. *This means that as long as this value is selected, the requirement can not become "suspect" due to attribute change.*
- 6 Click **Save**.

Ordering List Values

The end user will see the values in the order shown in this dialog.

To reorder the list of values, do any of the following:

- 1 In the left pane, click **List Attributes**.
- 2 Select the class you want to modify from the box on the top.
- 3 From the **Lists** box, select the list attribute you want to order. Then, do one of the following:
 - To manually reorder, select a value and use the arrows **Move Up**  or **Move Down** .
 - To sort the list values alphanumerically, click the **Sort Ascending**  or **Sort Descending**  button.
- 4 Click **Save**.

Changing a List Value in Existing Data

The Best Practice for changing a list value in existing data is to delete (basically mark as retired) an existing value and create a new one (see ["Removing or Deleting a List Attribute Values" on page 546](#)).

However, if a change to existing data (including baselined data) is required, this section describes a method for changing a list value that has been in use and thus exists in non-current requirement versions. It presupposes that you need to replace an obsolete list value in non-current versions and that an audit trail must be maintained.

- 1 Create a backup of the instance, including security. For further information on creating a backup, see ["Dimensions RM Backup" on page 735](#).

- 2 Add the new list value to the instance schema. (Do not remove the old value.)
- 3 Ensure that you have both Update and Update Non-Current access to the class that includes the modified list.
- 4 Create a report that lists:
 - PUID
 - Object_ID
 - The relevant list field with the obsolete value
- 5 Save the report as CSV.
- 6 Edit the CSV to change the obsolete value to the new value.
- 7 Add a **Reason for change** column and populate it with whatever statement satisfies your audit requirements. (This will overwrite existing **Reason for Change** entries.)
- 8 Use CSV Import in **Update** mode to match on Object_ID and map the list and reason for change attributes.
- 9 Verify that the data was correctly imported.
- 10 Remove your Update and Update Non-Current access to the class (assuming you added these just for this procedure).
- 11 Remove the old list value from the instance schema.

Category List Attribute Values

To access Category Values, select **Attribute Settings** from the **Administration** menu, choose the **Category Values** tab.

From the Category Values tab the Instance Administrator may:

- Modify or Set Category List Defaults: [Default List Values in Categories](#)
- Modify or Set Category Users: [Default User Values in Categories](#)

Default List Values in Categories

There are occasions when different categories require alternate default list values. For example, when creating a category or sub-category to manage objects associated with a new release or component, alternate defaults can be selected for all associated lists.

To access, select **Attribute Settings** from the **Administration** menu, choose the **Category Values** tab.

The default setting for most categories is to Inherit settings from the parent category, to restore inheritance to the parent see **Restore inheritance from the Parent Category**, below.

To define alternate list values, do the following:

- 1 In the category tree, select the **category** for which you want to assign defaults.

- 2 Select the **class** containing the list(s) to be modified.
- 3 **If the box to the left of the attribute name is checked** (meaning settings are inherited from the parent), clear the box.
- 4 Expand the attribute list.
- 5 Move the mouse point over the value to be used as a default value. A gray tick appears.
- 6 Click the gray tick. The tick turns blue, which indicates that this value is to be used as the default value.
- 7 Click **Save**.

To Restore inheritance from the Parent Category:

- 1 In the left pane, click **Category Values**.
- 2 In the category tree, select the category for which you want to restore inheritance for list values.
- 3 Check the box next to the attribute name.
- 4 Click **Save**.

Default User Values in Categories

When using the categories in Dimensions RM for sub-projects, it can be useful to have a different default user.

To define a default user for a category, do the following:

- 1 In the left pane, click **Category Values**.
- 2 In the category tree, select the category for which you want to define a different default values.
- 3 Select the class for which you want to modify list values access.
- 4 Clear the box next to the attribute name.
- 5 Move the mouse point over the value which you want to use as a default value. A grey tick appears.
- 6 Click the gray tick. The tick turns blue, which indicates that this value is used as the default value.
- 7 Click **Save**.

Configuring Calculated Attributes

Calculated attributes can be used with numeric, alphanumeric, text, and list attributes.

Given, for example, a numeric attribute containing an estimate for Development Effort, and a second numeric attribute containing Spent Effort, a calculated attribute may be defined to contain the Development Effort minus the Spent Effort.

It is also possible to create a calculated attribute in a Business requirement that displays the total of the Development Effort contained in **all** linked Functional requirements. This is shown in the following example.

Edit Calculation ✕

Class: Business_Requirement Related Class: Functional_Requirement

Calculated Attribute: Estimated Effort

Formula: Sum({Functional_Requirement.Dev Effort}) Clear

Insert Attribute: CalcTest2 Insert

Insert Function: Sum Insert

The formula is “constructed” either from a selected function applied to an attribute contained in one or more related requirements or a calculation based on multiple attributes from a single requirements.

In order to define an attribute as the target of a calculation, the **Attribute Editable** setting must **not** be checked. If checked, it will not appear on the list of possible calculation targets.

The Calculated functionality is built on a Numeric Attribute. For further information on creating an attribute to be used as a target of calculations, see chapter ["Numeric Attribute" on page 550](#). Consider using **Show as Duration** in the Attribute Definition, when calculating time-based estimates.

The following sections describe the functionality available after selecting **Attribute Settings** from the **Administration** menu, and choosing the **Calculations** tab:

- ["Creating a Calculated Attribute" on page 559](#)
- ["Editing a Calculated Attribute" on page 560](#).
- ["Deleting a Calculated Attribute" on page 560](#)
- All about constructing Formulas: ["About Formulas" on page 560](#)

Creating a Calculated Attribute

Once the calculated attribute has been defined, do the following:

- 1** Select **Attribute Settings** from the **Administration** menu. This opens the **Attribute Settings** dialog.
- 2** In the left pane, click **Calculation**.
- 3** Click **New**, which will open the **Create Calculation** dialog.
- 4** From the **Class** box, select the class containing the calculated attribute.
- 5** From the **Calculated Attribute** box, select an attribute to receive the result. Note that the list will only contains attributes which are read-only.

- 6 In the **Formula** box, specify the formula. For further information on formulas, see chapter ["About Formulas" on page 560](#).
- 7 Click **Save**.



NOTE Calculations for Existing Requirements

For existing requirements, the value will not be calculated automatically. To calculate the value for existing requirements, from the Calculations tab, highlight the saved calculation and click the **Calculate** button. A warning will be displayed as the calculation may take some time.

Editing a Calculated Attribute

To edit a calculated attribute, do the following:

- 1 Select **Attribute Settings** from the **Administration** menu. This opens the **Attribute Settings** dialog.
- 2 In the left pane, click **Calculation**.
- 3 From the list of calculated attributes, select the attribute configuration you want to modify and click **Edit**. This opens the **Edit Calculation** dialog.
- 4 In the **Formula** box, modify the formula. For further information on formulas, see chapter ["About Formulas" on page 560](#).
- 5 Click **Save**.

Deleting a Calculated Attribute

To delete a calculated attribute, do the following:

- 1 Select **Attribute Settings** from the **Administration** menu. This opens the **Attribute Settings** dialog.
- 2 In the left pane, click **Calculation**.
- 3 From the list of calculated attributes, select the calculated attribute you want to delete.
- 4 Click **Delete**. This opens the **Delete Calculation** dialog.
- 5 Confirm that you want to delete the calculated attribute. This removes the calculated attribute configuration.
- 6 The attribute will still be available on dialogs. To remove the attribute, hide it, or enable it for editing see chapter ["Attribute Definition" on page 533](#).

About Formulas

About Formulas for Numeric Attributes

Formulas can contain numbers, or reference numeric attributes, even if these attributes are in a different class. Formulas can use parentheses to allow changing the priority of calculations.

About Formulas for Alphanumeric or Text Attributes

Formulas can contain texts, or reference alphanumeric or text attributes of the same class. Alphanumeric or text attributes can be concatenated with other alphanumeric or text attributes, or static text.

Alphanumeric and text attributes only support the **+** operator (concatenate texts).

1 To reference numeric attributes from the same class.

- a the **Related Class** option in the **Create** or **Edit Calculation** dialog must be clear.
- b From the **Insert Attribute** box, select the desired attribute; click **Insert..**
- c To insert a static number:
At the desired position, click into the **Formula** box and type in the number
- d To insert an operator:
From the **Insert Operator** box, select the desired operator; click **Insert.**

2 To reference Numeric Attributes from another class.

To reference numeric attributes in other classes, a relationship must exist between the classes. For example, to calculate the total run time for all test cases derived from a single functional requirement, the test cases must be linked to the functional requirement. For relationship details, see ["Defining Relationships" on page 579](#).

Note that when using Numeric attributes from other classes, you can use aggregate functions Sum, Average, Min, and Max only.

- a Ensure that the **Related Class** option is selected and then select the related class.
- b From the **Insert Attribute** box, select the desired attribute; click **Insert.**
- c To insert a function
From the **Insert Function** box, select the desired function; click **Insert.**

3 To reference Alphanumeric or Text Attributes.

- a The **Related Class** option in the **Create** or **Edit Calculation** dialog must be clear.
- b To insert an alphanumeric or text attribute:
From the **Insert Attribute** box, select the desired attribute; click **Insert.**
- c To insert static text:
At the desired position, click into the **Formula** box and type the text surrounded by single quotes, e.g. 'Your Text'.
- d To concatenate text:
From the **Insert Operator** box, select **+**; click insert.

4 To reference List Attributes from another Class

Referencing list attributes from another class may be helpful if you need to match certain conditions based on the linked requirements. For example:

You have the classes `Product_Requirement` and `Function_Requirement`. With the relationship (link) between the two classes, `Product_Requirement` is the parent and `Function_Requirement` is the child. Both classes have a list attribute "Security" with the values: Low, Medium and High. By using calculated list attributes you can define that if one linked `Function_Requirement` has Low selected with its Security attribute, also the `Product_Requirement` shows Low for its Security attribute.

- a Ensure that the **Related Class** option is selected and then select the related class.
- b From the **Calculated Attribute** box, select the attribute to receive the calculated value.
- c From the **Insert Attribute** box, select the desired attribute.



IMPORTANT!

The calculated attribute must have the same values as the attribute in the insert attribute.

- d From the **Insert Function** box, select **Max** or **Min**; click Insert.



NOTE The Insert Function

The Insert function defines which value is propagated into the attribute of the parent class.

- **Min:** The lowest value is propagated.
- **Max:** The highest value is propagated.

Example:

The attribute has values Val1, Val2, Val3 and Val4. Requirements only use Val2 and Val3 of the attribute.

- **Min:** Value Val2 is propagated.
- **Max:** Value Val3 is propagated.

- e Click **Order Values**. This opens the **Order Values** dialog.
- f Change the order of items in the **Order from Maximum to Minimum** list either by drag and drop or by selecting it and clicking  or .
- g Click **OK** to close the **Order Values** dialog.

AI Administrator Server Setup

This section describes the integration between Dimensions RM and your selected AI Solution. Dimensions RM supports AI Services in the Cloud, for example Google Gemini, and on-premise solutions like LLAMA. With support for the OpenAI API, Dimensions RM can be integrated with numerous LLMs.

The Dimensions RM implementation was built and tested using Google Gemini, and Chatbot.

Once the integration to your AI service of choice has been completed, and the desired features enabled, users can find and execute the AI related features by following the Open Text Aviator Icon .

The settings for the AI functionality can only be established or modified through the **Integration** tab accessed from the Administration Menu.

In this Section we include:

[Enabling Google Gemini Integration](#)

[Enabling ChatGPT](#)

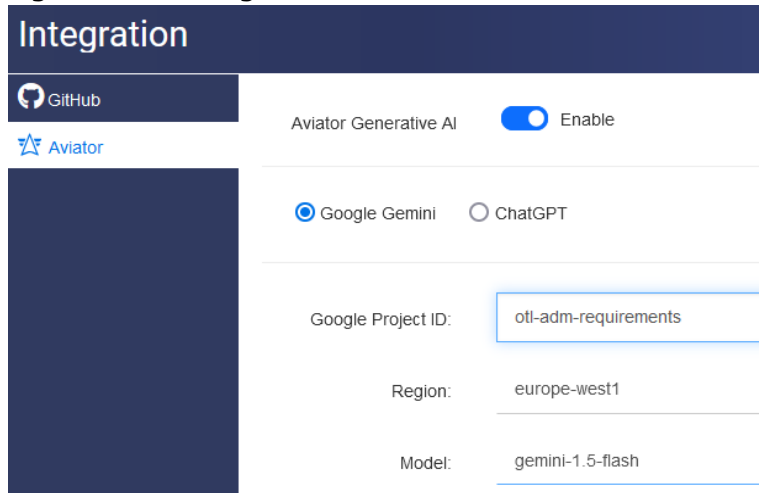
[Enabling Test Case Generation](#)

[Enabling User Story Generation](#)

[Enabling Quality Verification](#)

[Enabling Document Analysis and Generation](#)

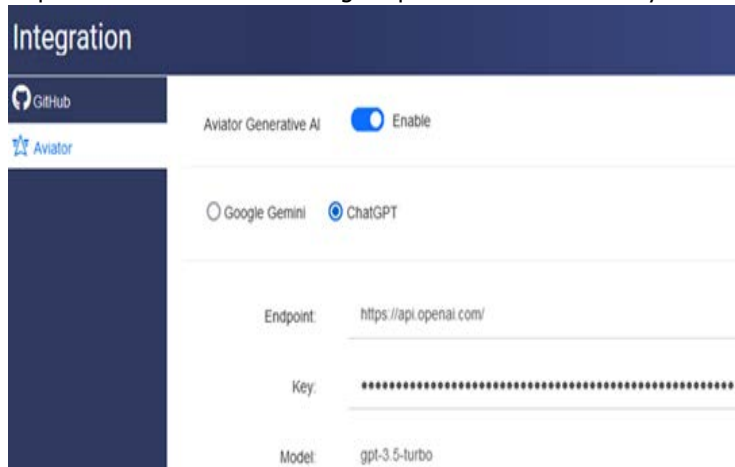
Enabling Google Gemini Integration



The screenshot shows the 'Integration' tab in the administration menu. On the left, there are icons for GitHub and Aviator. The main content area is titled 'Aviator Generative AI' and has a toggle switch set to 'Enable'. Below this, there are two radio buttons: 'Google Gemini' (selected) and 'ChatGPT'. Further down, there are three input fields: 'Google Project ID' with the value 'otl-adm-requirements', 'Region' with the value 'europe-west1', and 'Model' with the value 'gemini-1.5-flash'.

Enabling ChatGPT

We strongly recommend that when configuring ChatGPT for use with Dimensions RM that the endpoint be secure. Not using https could be a security risk.



The screenshot shows the 'Integration' tab in the administration menu. On the left, there are icons for GitHub and Aviator. The main content area is titled 'Aviator Generative AI' and has a toggle switch set to 'Enable'. Below this, there are two radio buttons: 'Google Gemini' and 'ChatGPT' (selected). Further down, there are three input fields: 'Endpoint' with the value 'https://api.openai.com/', 'Key' with a masked value '*****', and 'Model' with the value 'gpt-3.5-turbo'.

Enabling Test Case Generation

The following are set in the Test Case section of the Integration Aviator tab accessed from the Administration Menu. A Test Case class must exist in order to enable Test Case generation, and it must be related to the class intended to create/generate the test cases. For example, Functional Requirements defined with a relationship to Test Cases.

Test Case: When enabled, the Action **AI Generation** will be included in the Requirements set of the Actions pane; Test Case generation will be supported.

Include Context: When enabled, additional context will be included with the Test Case generation.

Linked Classes: From the drop-down, select from the classes linked to the Test Case Class, those classes to be used as input to the Test Case generation. In the example below, we have chosen the Functional Requirement and Use Case classes.

Default Amount: The number of Test Case generated with each submission. The default is 10.

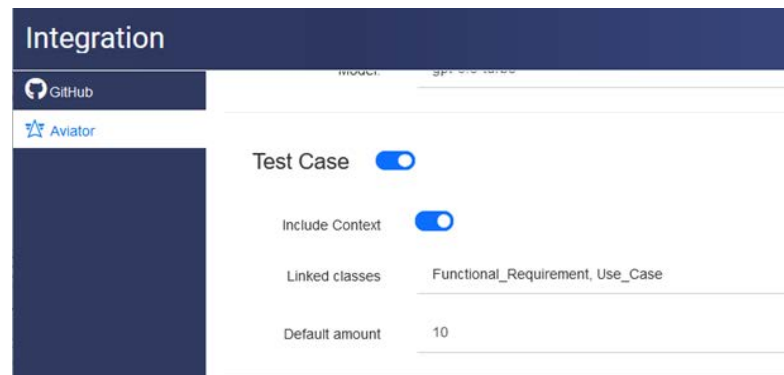


Figure 12-8. Test Case Generation, Enabled.

Enabling User Story Generation

The following are set in the User Story section of the Integration Aviator tab accessed from the Administration Menu.

A User Story class must exist in order to enable User Story generation, and it must be related to the class intended to create/generate the User Stories. For example, a Use Case class defined with a relationship to User Stories.

User Story: When **enabled**, the Action **AI Generation** will be included in the Requirements set of the Actions pane; User Story generation will be supported.

Default Amount: The number of User Stories generated with each submission. The default is 10.

Enabling Quality Verification

The following are set in the Quality section of the Integration Aviator tab accessed from the Administration Menu. Quality Verification is used to review and report on the Quality of requirements.

Quality: When **enabled**, the Action **Verify Quality** will be included in the Requirements set of the Actions pane.

The Quality Verification is capable of checking requirements to ensure that they meet one or more of the following: Atomic, Correct, Complete, Verifiable, Consistent and Unambiguous.

All or a subset may be enabled.

Enabling Document Analysis and Generation

The following are enabled in the Document section of the Integration Aviator tab accessed from the Administration Menu. In this section, one or more of the document-related AI options may be enabled.

Generate Titles when enabled titles may be generated for requirements without titles, using the **Generate Titles** action from the Documents section of the Actions pane. Title generation is also available as an option in ReqIF import

Analyze Gaps: When enabled, the ability to find the gaps will be supported through the **Analyze Gaps** action in the Requirements set of the Actions pane.

Link: When enabled, the Link action will be included in the Requirements set of the Actions pane. This feature provides an ability to propose links in document split view.

Find Conflicts: When enabled the **Find Conflicts** action will be included in the Requirements set of the Actions pane. This feature provides an ability to alert users to potential conflicts in document content.

Autocomplete: When enabled the Autocomplete action will be available in the Requirements set of the Actions pane. This feature proposes paths to statement completion.

Default Amount: The number of proposals generated for Autocomplete. The default is 3.

An Overview of the RM Schema

This section describes the functions available using the Schema Definition, accessed by selecting **Schema Definition** located on the **Administration** menu.

The RM schema diagram includes the classes, attributes, relationships and workflow used to define and track requirement objects. Before the new schema can be populated, it must exist. Typically, the Instance Administrator will determine how the new instance will be named, and then take one of the following steps:

- 1 Request the creation of a new instance:

The **System Administrator** using ["Managing Instances" on page 719](#), is responsible for creating a new instance.

This new instance will be a blank slate to be used by the Instance Administrator to create new requirement types (see ["Defining a Class" on page 571](#)) and to populate each new class with the properties necessary to clarify, categorize and manage (see ["Attribute Definition" on page 533](#)).

- 2 Request the deployment of an existing schema.

A new schema can be **deployed** from an existing instance. If members of the organization have developed an instance and process that is working well in

existing instances, the schema may be copied to populate a new instance. The **System Administrator** can deploy the schema from any existing instance (see ["Deploying the Instance Schema" on page 813](#)).

Once the instance exists, whether starting new or using a deployed schema, it is the responsibility of the **Instance Administrator(s)** to define and or modify each requirement **class** (e.g., Business, Functional, Software, System), the attributes contained within them, their relationships to one another, as well as the processes that bind them.

It is always possible to extend the Dimensions RM process, as the team becomes more familiar with the solution, its philosophy and features. Attributes can be added or hidden, relationships and workflow can be added or modified. Dimensions RM was developed with process improvement in mind.

Defining classes for an instance allows users to:

- Organize information according to meaningful requirement types.
- Qualify the information within each class according to attributes defined This enables user to search the instance based on specific criteria (e.g., priority, creation date, component, stakeholder).
- Maintain relationships between the classes for traceability.

This section includes the following:

- Things to think about before designing the schema: ["Considerations Prior to Defining Classes" on page 566](#).
- Accessing and Unlocking the Schema: ["Opening and Unlocking the Instance Schema" on page 568](#).
- Pointers concerning grid setup and manipulation: ["Manipulating the Schema Grid" on page 569](#).
- The details relating to class definition: ["Schema Class Creation" on page 570](#).

Considerations Prior to Defining Classes

Before defining classes, it is important to evaluate the type and scope of information to be modeled. The following will help users to understand the instance so that the most effective model can be developed.

Identify the type of applications or components that exist in your organization. Are there feasibility studies, prototypes, or full-scale development projects? This will help you determine the phasing for the projects and decide how much information needs to be modeled, where the emphasis should be placed and what kinds of reports will be needed.

Assess the documentation and reporting requirements. They vary with the type of project and are also influenced by reports that your organization may have produced in the past. For example, for a feasibility study, risk assessment is a major issue, and you will probably want to report on high-risk components or modifications.

Identify the customer and proprietary information that should be modeled and tracked through the successive phases of the projects.

Assess which subsets of the information will be the most significant and/or useful.

Consider how previous experience can assist in identifying what information needs to be modeled. You may be able to use a modified version of an existing Dimensions RM information model.

Identify the development phases for your projects.

Identify the information classes needed for the beginning phase, such as functional specifications.

Identify the information classes needed for the final phase, such as test results (unit, integration and acceptance).

Determine the required information flow between phases. This helps to identify the relationships between classes.

Determine if some of the projects will be subcontracted to off-site development teams and requires partitioning of the information.

Assess the detail level of the information available, and capture some basic assumptions about the structure of the information. Information assessment helps you to determine the structure of your information model as laid out in the following list:

Very General: General or summarized information, such as operational scenarios or marketing plans.

High-level: High-level information, such as system specification narratives that cover design constraints, desired features and elements that should not be included in the solution.

Detailed: Detailed information, such as subsystem specifications that provide implementation level details.

Low-level: Low-level details, such as a requirement for a certain version of software or hardware.

Assess and define the operational parameters, such as:

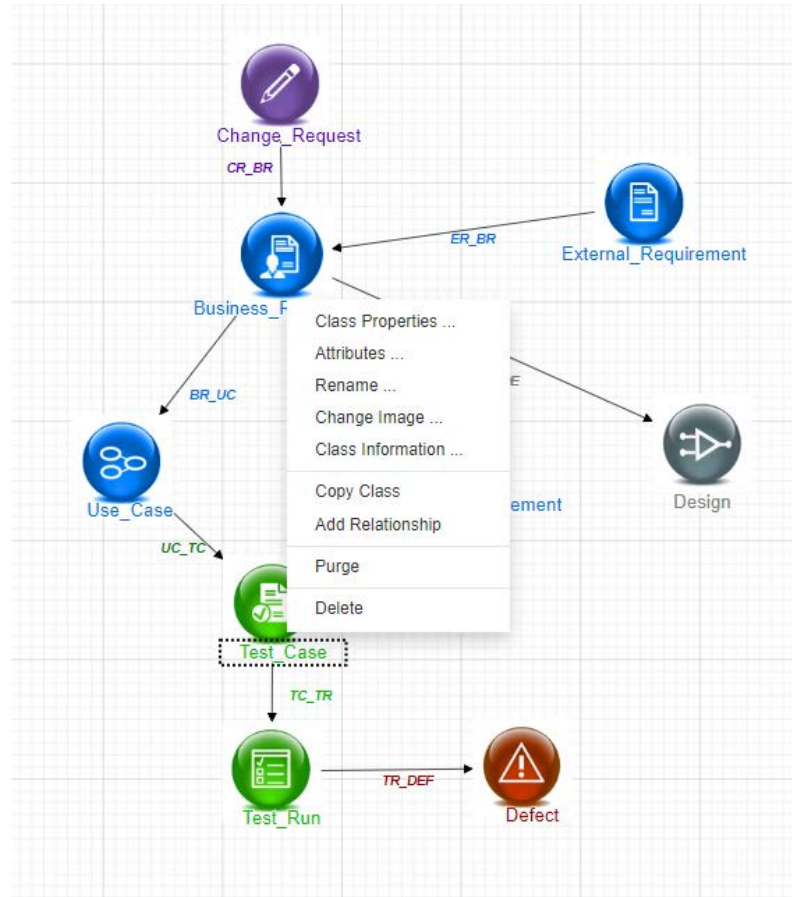
The required level of tracking among requirements, other project information, and information generated by CASE tools.

The members of the project teams, their responsibilities, and the access rights each will require for various types of project information during specific phases. Group, user and Category permissions assist in determining which classes need to be created, which documents will be associated with each class as well as the logical breakdown of the data.

Identifying the reports that are generated helps to determine the attributes that will be needed later for searching, sorting, and printing.

The following is the Schema Definition from the ALM_Demo sample instance (see "[Sample Instances](#)" on page 24).

These samples are a useful source of ideas, and can be used for testing, but they should not be used as a basis for a new instance schema.



Missing Features in the Instance Schema Editor

Historically, most schema administration has been accomplished using the Class Definition function in RM Manage, the tool used for RM Administration. Each new release of RM has included the migration of additional Administrator functions into the browser, only the following features have not yet been migrated.

- **Schema Deployment** - A selected schema or changes to a schema can be deployed to one or more instances within the same database, or across the network. Administrators can make additions to classes or to attribute lists within classes, and then share those updates to instances sharing the same basis schema. For details see ["Deploying the Instance Schema" on page 813](#).
- **Copying workflows** from one class to another can be done from the Class Definition tool, see ["Copying a Workflow to another Class" on page 817](#).

Accessing the Instance Schema

Opening and Unlocking the Instance Schema

Those assigned the role of **Instance Administrator** may make schema changes using dialogs accessed from **Schema Definition** or **Attribute Settings**; both are selected the

Administration menu. Once opened the schema will be locked, to ensure that you, and only you, are introducing changes to the instance schema.

When attempting to open a locked schema, the Schema is Locked dialog is displayed, identifying the user currently holding the lock.

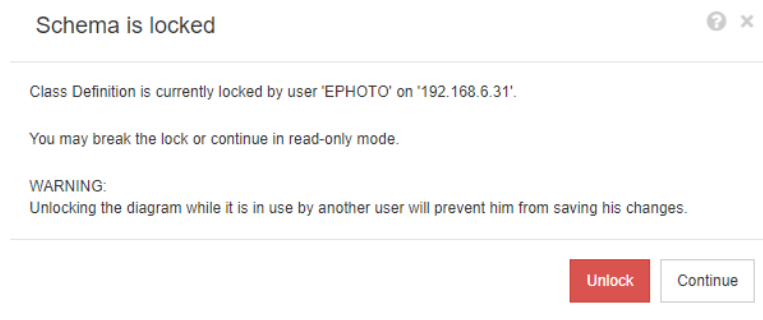


Figure 12-9. The Instance Schema is Locked

If you are absolutely sure the user identified is **no longer** modifying the instance schema, choose **Unlock** to reset the lock and open the schema in read/write mode. Alternatively, you can choose continue to load the schema in read-only mode.

To save changes to the schema, click  in the toolbar.

To reload the instance schema, click  in the toolbar.

Saving the Instance Schema

When making schema changes it is best practice to make the change, save the schema and exit.

To save the instance schema, click  in the toolbar.

Reloading the Instance Schema

To reload the instance schema, click  in the toolbar.

Manipulating the Schema Grid

Canvas Grid

The grid is a set of evenly spaced points on the canvas that are used to align components when they are moved. When the snap-to-grid option is enabled, the top left corner of a component is aligned to a grid point when the component is moved. The snap-to-grid feature can be enabled and disabled using by selecting **Snap** from the **Grid** menu. Grid visibility can be turned on and off by selecting **Show** from the **Grid** menu.

To change the distance between the points of the grid, select **Spacing** from the **Grid** menu.

Panning the Diagram

To pan the diagram, click the diagram background and move it into the desired direction.

Selecting Objects

You can select a single component by left-clicking it in selection mode. If you want to select multiple components, hold the Ctrl key and then left-click each of the components you want to include in the selection, or click and drag to draw a selection rectangle.

Zooming the Diagram

For quickly changing the zoom, you can use the mouse wheel. Alternatively, you can use the following options from the **Zoom** menu:

Factor: Move the slider to the right to zoom in, or to the left to zoom out.

100%: Scales the diagram to 100% (original size).

Zoom to fit: Scales the diagram such that all components on the diagram are visible in the window.

Zoom to selection: Scales the diagram such that all selected components are visible in the window. To select multiple components, hold down the Ctrl key while clicking the left mouse button on the class or relationship you want to add to the selection.

Schema Class Creation

Class names (requirement types) should reflect the conventions familiar to users when implementing or expanding the Dimensions RM schema. If a team has been maintaining requirements in spread sheets, word files or a different solution, it is recommended that they create classes in Dimensions RM using similar names. This will make the transition easier.

There is a large and growing list of requirement classes available under the **New** drop-down in the Schema Definition dialog. There is a **Requirement** class that can be used as the basis for any requirement type, as well as classes for use cases, releases, test cases, sprints and stories. Each of these include a set of attributes considered useful to get you started, but almost all (exceptions noted below) are available for consideration, modification and adoption. For all classes Dimensions RM automatically stores the information necessary to determine "who did what and when."

As work continues, it is always possible to add attributes to a defined class, attributes to assist with reporting or searching as the pool of requirements grows and needs expand.



CAUTION! The following classes are predefined and used internally.

1 The **Poll** class is for internal use only and must not be modified.

2 The **Chapter** class is used to support document preparation.

New attributes may be added to the class, see [Defining the Chapter Class](#).

The following attributes must not be modified:

- Chapter Description
- Chapter Type
- CM Associations short
- Doc Description
- Hide Chapter Number
- Reason for Change
- Title

3 The **Comment** class supports discussion threads.

New attributes may be added, see [Supporting Comments](#).

The following attributes must not be modified:

- Comment
- Subject

If you are unfamiliar with the editing functions on the Schema, please review ["Manipulating the Schema Grid" on page 569](#).

To add a class, and to access all related functions, see ["Defining a Class" on page 571](#).

Defining a Class

A list of classes has been prepared for the new selection. The content is not cast in stone; it is there to get you started. If you are unsure which class selection best suits your needs, you can add, review, consider, and delete attributes from any of the options you select. You can also choose a class, check its content, and if it doesn't appear to contain the necessary attributes for the objects to be defined, delete it and try another. The generic Requirement class is a good starting point.

To add a new class:

1 Position the cursor at the desired location on the schema grid and select the right mouse button to open the Add Class dialog, expand the class list and choose a type..

Many types have been defined, with a starter set of attributes. If you are not sure, pick a type, save it, create data and see if it suits the needs. You can add or remove attributes or delete the class and try another.

2 Enter a unique name for the class, one that describes the data to be held within it.

For details on conventions for class names see ["Naming Conventions for Classes" on page 610](#)

- 3 Click **OK** to add the class with the specified name to the instance schema.
- 4 Click  to save the instance schema.

To complete the Class definition, right click on the new class.

The menu lists the following actions, all are useful, but those important to the initial setup are listed in **Bold**. We suggest you begin with **Attributes**; this allows a review of the custom attributes defined and provides a dialog to allow for the creation of new attributes. Please note that Class Information is also useful in understanding all attributes included in a base class definition.

Class Properties: Assign a title and description to the new class, see ["Class Properties" on page 572](#).

Attributes: ["Attribute Definition" on page 533](#).

The Class can be renamed: ["Renaming a Class" on page 575](#)

The Icon can be changed: ["Changing a Class Image" on page 575](#).

Class Information: Displays the Workflow (if defined) as well as all attributes in the class, including associated descriptions; a very useful dialog: ["Class Information" on page 575](#).

Copy a class from one that exists: ["Copying a Class" on page 575](#).

Add Relationships to a new or existing Class: ["Defining the Chapter Class" on page 578](#).

Starting Fresh, Clearing the Content: There may be times when you want to remove all that has been gathered and start fresh: ["Purging Class Data" on page 576](#).

Remove a Class from the Schema: ["Deleting a Class" on page 576](#).

Exporting all or part of the Schema Configuration: ["Export Schema Configuration" on page 576](#).

Class Properties

Right-click on the class, Choose **Class Properties, Properties** Tab to Specify a Class Description, attributes, and Settings

A **Class Description** can and should be associated with all items defined in the instance schema. A class description can help to clarify the contents, and even the team responsible for content definition. For example, the Business Requirement class might be assigned the description. "Requirements defined and reviewed by business analysts and product management".

Default Title Attribute: the attribute from among those defined within the class that shall be used as the title when the class objects are displayed. This may be the attribute defined as the Name or Title but any Alphanumeric attribute may be used.

Default Description Attribute: The Text attribute that shall be used as the description. The requirement statement (description) is typically used.

Default PUID Attribute: The PUID (Persistent Unique ID) is used by RM to manage requirements such that change is maintained against objects uniquely identified. The Attribute defaults to the Display Name assigned to the PUID.

Enable Workflow: Checkbox to enable workflow for a class. See chapter ["Creating a Workflow" on page 590](#)

Auto-size Attributes on Form: Checking this option supports a more structured layout, by providing a facility to assign attributes to a form equally, such that attributes with varying display lengths line up on the form.

There are additional mechanisms for controlling the placement of attributes on forms, see ["Dimensions RM Web Forms" on page 620](#).

Hidden Class: This is a setting reserved for special classes created within Dimensions RM and used to manage RM controlled data. An example of this type of class is **Test Run Steps**.

The objects in the class **Test Run Steps** are generated as part of test management to capture test verification information; changes cannot be made outside of the test execution. This class is never directly available to users for input or modification.

Create Parent Category: This setting is available only when creating the Product and Project classes. It is most effective in managing basis applications (e.g., Products) within a clear structure, with the variants clearly identified under Projects.

Also Available from Class Properties:

Style: The style tab provides a dialog used for changing the color and font applied to the class in the schema display, see [Class Properties Style Tab](#).

Security: The security tab can be used to set group permissions, should administrators choose to set permissions on the class, see [Class Properties Security Tab](#).

Class Properties Style Tab

Right-click on the class, Choose **Class Properties, Style** Tab to change the **Color and Font on the schema display**. To change the image on the Class Icon see ["Changing a Class Image" on page 575](#).

Screen shots of the schema definition are often used in internal process ation. When a schema contains many classes, it is possible to modify font size and color to use as indicators to show relevance to different teams.

To change the display used for a class in the schema, right-click on the class, choose **Class Properties**, and select the **Style tab**.

The Label containing the Class Name can be modified in one or all of the following ways:

Font - a selection of fonts are available from the menu.

Font Size - Increase or decrease the size.

Color - Click into the current color to raise the color bar.

Style - Choose from: Bold, Italic, Underline and/or Strikeout.

Class Properties Security Tab

Setting Group Permissions on the Class

In Dimensions RM users are defined and assigned to groups. The assignment of group permissions can be specified for each group within each class, or more generally by group with permissions applied across classes. The choice depends on process, needs and how the organization thinks about security.

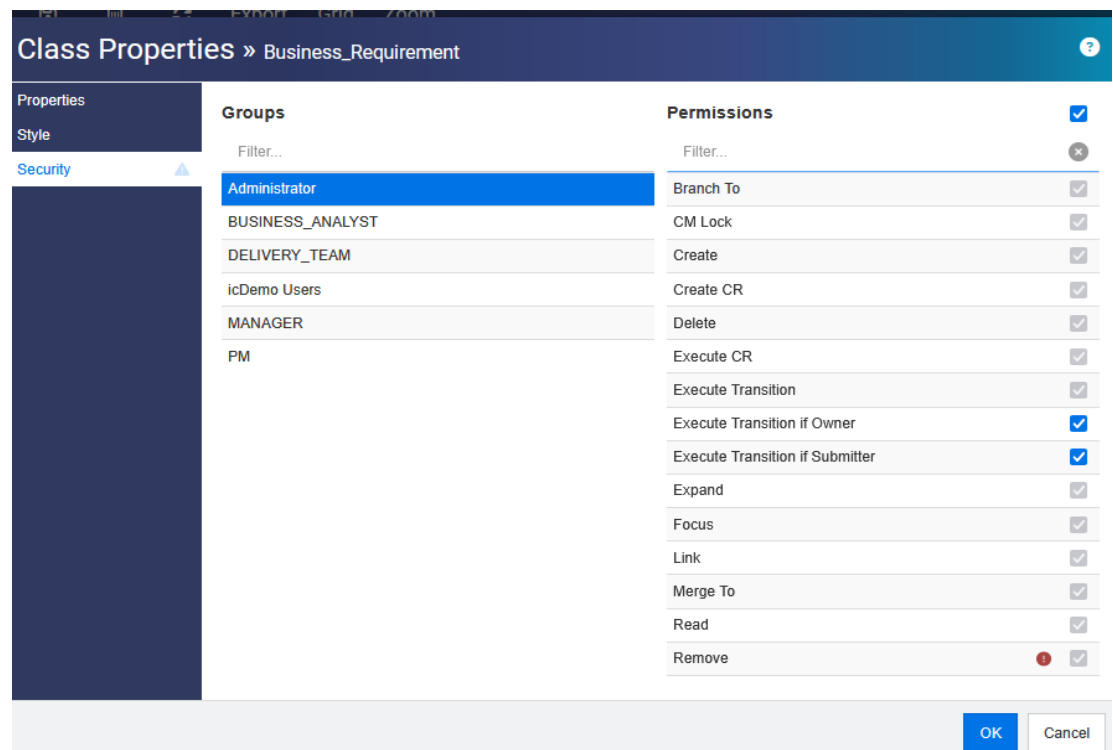
If, for example, all team members have read access to both Business and Functional requirements, but only Business Analysts may modify Business requirements, then it may be reasonable to assign permissions within each class. However, the team may create separate folders (categories) for products, systems or components, and may want to assign permissions to group members within categories across classes.

To change the class security settings:

Right-click on the class, choose Class Properties, and select the Security tab.

Select a group from the left column and set permissions on the right. It is possible to check the permission box to set all Actions as shown below. These settings can be overridden by

For a complete list of Valid Transactions/Actions see ["Valid Actions" on page 526](#).



Attribute Settings

Attribute Settings may be accessed directly from the Class on the Schema, right click on a class and select Attributes, or through **Attribute Settings** on the Administration menu.

For complete documentation concerning **Attribute Settings** See ["Attribute Definition" on page 533](#).

Renaming a Class

Right-click the class and select **Rename** from the shortcut menu. This opens the **Rename** dialog. Enter a unique name for the class that describes the data held in the class.

The class name must follow the conventions specified in chapter "[Naming Conventions for Classes](#)" on page 610

Changing a Class Image

When creating a class, the generic class image  is used. You can change the image to reflect the purpose of the class. There are folders listed containing the full set of images in various colors, which makes differentiating between class groupings simpler. It is also possible for the team to create and store their own images.

To change the image, execute these steps:

- 1 Right-click the class and select **Change Image...** from the shortcut menu. This opens the **Change Image** dialog.
- 2 The list contains images with a turquoise background. If you wish to use a different background color, select a sub-folder.
- 3 Select an image and click **OK**.
- 4 Click  to save the instance schema.

Class Information

This function creates a printable form containing a description of Workflow, if created, and detail concerning all attributes, both custom and system, for the selected class. The output, very helpful to users new and old, includes:

- Class description
- Workflow diagram, State and transition detail
- Custom attributes, with descriptions
- System attributes, with description

Copying a Class

If you have created and populated a Class, and wish to create a second class of similar attribute structure, you may right click on the existing class and select **Copy Class** from the menu.

To Copy a class:

- 1 Right-click the class and select **Copy Class**.
- 2 Right-click the canvas where the class is to be displayed. This opens the Class dialog.
- 3 Enter a unique name for the class that describes the data held in the class.
The class name must follow the conventions specified in chapter "[Naming Conventions for Classes](#)" on page 610
- 4 Click **Save** to add the class with the name specified to the instance schema. The schema is saved in the process.

- 5 Please note that if you have modified the PUID format to assign each requirement class a unique prefix, you should make this same modification to the copied class, please see ["PUID Attribute" on page 554](#).

Purging Class Data

Purging, i.e., permanently erasing objects from the instance, is not something often done - although it can be useful, especially at startup. ***Purging is Forever!***

It is sometimes the case, once the attributes are created, and data is imported, that there is much not to like about the result. Certainly attribute display names can be changed, and forms can be modified but sometimes it makes sense to purge the data and start all over again. You are back to a clean slate with the numbering back to 1 - or whatever starting point was selected.

To purge the data from a class:

- 1 Right-click the class and select **Purge** from the shortcut menu. This opens the **Purge Data** dialog.
- 2 Click **Purge** to remove all objects in the class and their related links.
- 3 When purging for a class or relationship has been completed successfully, a check mark shows the success.

Should purging fail, an "x" shows the failure. Hover over the "x" to get further information about the failure.
- 4 Click **OK** to close the **Purge Data** dialog.

Deleting a Class

Deleting a class erases the class from the schema, and removes all data associated with it.

Deleting the class, much like purging the contents, is forever.

If a class contains useful information, but the team prefers to stop maintaining it, permissions can be removed, as can its relationship to other classes and, in instance settings, it can be removed from class lists. This will keep it around for future reference, without concerns for it raising questions or collecting erroneous changes.

However, if the class and its content are deemed to be useless, remove it.

To delete a class from the instance schema, do one of the following:

- Right-click the class you want to delete and select **Delete** from the shortcut menu.
- Select the class and then press the **Delete** key.

Export Schema Configuration

This function exports all or part of the RM Schema; the exported file can be saved as HTML, JSON or as a plain text file.

To access the **Export Schema Configuration** function select **Schema Definition** from the **Administration** menu to open the Instance schema. If there are issues opening the schema, see ["Opening and Unlocking the Instance Schema" on page 568](#).

From the open Instance Schema, click-on the **Export** function from the top menu bar.

- The output from this export is based on selected **Classes**, **Relationships** and/or **Groups**.
- For selected **Classes** the user may choose to report on Implicit (system) Attributes, User Attributes or both
- For Selected **Relationships** the user may choose to report on Implicit (system) Attributes, User Attributes, Relationship Constraints, or on all three.
- For selected **Groups** permissions may be selected by Action Set, e.g. permissions associated with Attributes, Collections, Reports, Classes etc. The output can be extensive. If you are gathering information concerning group access to specific classes, it is best to limit the data collected.
- The output type, which can be saved as HTML, JSON or Plain Text (txt), is selected from the menu on the **Export** button

For example, given the selection of:

- Functional Requirement Class, User Attributes only
- Nothing selected from Relationships
- Engineering Group, Action Set: All Checked
- Output Plain Text

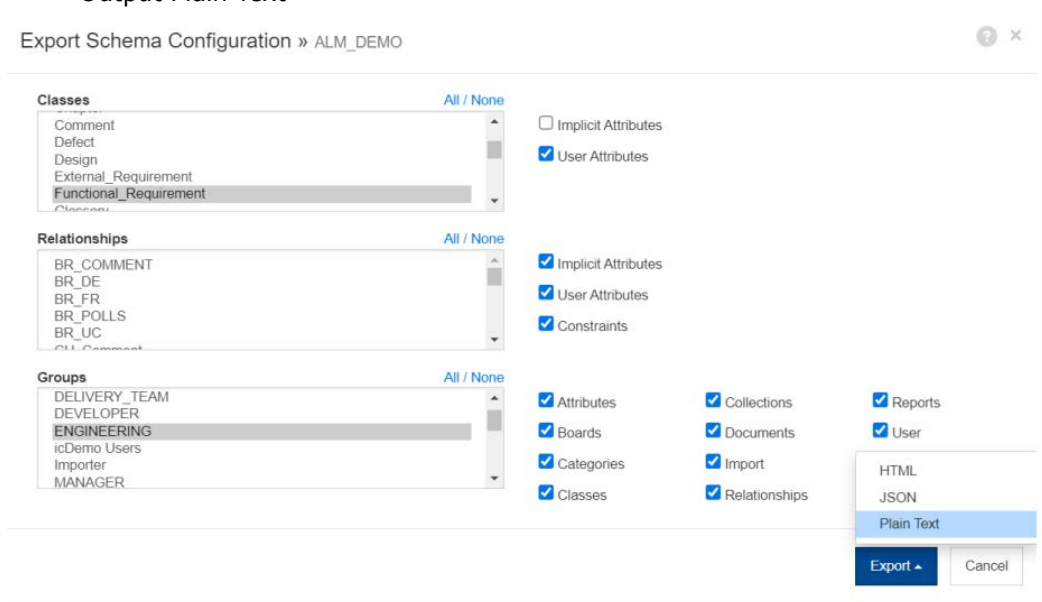


Figure 12-10. Selecting Functional Class for Engineering Group, No Relationships Selected. The output is Plain Text.

The results include for each Attribute in the selected class, all settings, and for each Group selected all permissions. The sample below shows the settings for the Attribute **Dev Effort** and the group permissions for the **Report** Actions.

Numeric Attribute 'Dev Effort'	
Description	Estimated development effort
used in release planning.	
Attribute Name	DEV_EFFORT
Attribute Mandatory	False
Attribute Editable	True
Populate on Copy	True
Populate on Create And Link	True
Force Unique Value	False
Display for Entry	True
Change raises Suspicion	False
Maximum Length	10
Display Length	10
Minimum Value	<none>
Maximum Value	<none>
Default Value	<none>
Reports	
Create	True
Create Public	True
Read	True
Remove	False
Rename	True
Update	True

Defining the Chapter Class

In order to create, manage and export documents, a **Chapter** class must be added to the schema.

To add the Chapter class, follow these steps:

- 1 Open the instance schema (see chapter ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 Select Chapter from the **New** menu.
- 3 Click **OK** to add the class to the instance schema.
- 4 Click  to save the instance schema.

As can be seen in the section, ["Creating a New Chapter" on page 255](#), the special attributes in the Chapter class are used to manage name and describe each chapter as well as to implement settings, e.g., **Hide Chapter Number**.

It is also possible to Create an Attribute, **CHAPTER_NUMBER**, which can be used to manually assign a custom number or prefix before each Chapter title. For an example, see [Creating a Chapter from the Navigation Pane](#).

Defining the Glossary Class

In order to include an RM supported glossary in your documents, a Glossary Class must be added to the schema. The Glossary Class is a special class, defined by the Instance Administrator and maintained by RM to support corporate and/or project glossaries.

To Create a Glossary:

- 1 Open the instance schema (see chapter ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 Select Glossary from the **New** menu.
- 3 The Glossary name will default to Glossary, the name may be changed if required by the local process.

- 4 Click **OK** to add the class to the instance schema.
- 5 Click  to save the instance schema.

To add entries to the Glossary, refer to the instructions in Section ["Glossary Tab" on page 327](#).

Bulk Importing Glossary entries:

The Glossary Class is a Hidden Class, a class used to manage RM controlled data. Hidden Classes will not be available for selection on import. In order to bulk import Glossary entries, the Instance Administrator should:

- a **Right-click** the Glossary Class.
- b **Select** Class Properties.
- c **Uncheck** the **Hidden Class** box.
 Import the records as you would any Word or Excel file.
- d **Right-click** the Glossary Class.
- e **Select** Class Properties.
- f **Recheck** the **Hidden Class** designation.

Defining Relationships

A relationship represents a logical association between two classes. The two classes are referred to as the primary class (the class from which the relationship flows), and the secondary class (the class to which the relationship flows).

Adding a relationship to the Schema Definition diagram creates the connection between two classes that allows links to be created between objects of those class types. Creating links between, for example, a change request and the requirements derived from it and continuing to link through to test cases and defects, supports the traceability necessary to good requirement management process.

Relationships, like classes, become part of the schema diagram, they have properties, including constraints, and attributes.

Adding a New Relationship

Relationships can be added from the **New** menu in schema definition, as well as with a right-click on the class. The benefit of using the latter method is that the source is clear and you need only to click on the target to complete the connection.

To create a relationship, execute these steps:

- 1 Right-click on the Class intended as the **Source (primary class)** of the relationship.
- 2 Select **Add Relationship** from the menu.
- 3 Click into the Class intended as the **Target (secondary class)** of the relationship; this opens the **Add Relationship** dialog.
- 4 Enter a unique name for the relationship, consistent with local and solution conventions. For example, some teams choose to use standard abbreviations with the link direction: BRtoFR. Or, some teams prefer to show breakdown: BRelicitsFR.

See ["Naming Conventions for Relationships" on page 611](#)

- 5 Click **OK** to add the relationship to your instance schema.
- 6 The Instance Schema must be saved before continuing .

To complete the **Relationship** definition, right click on the Relationship line and choose from the menu. All Actions are useful, but only the first is important to a new definition.

- **Title, Description, Cardinality, Transfer Rules:** [Relationship Properties](#).
- The Color and Font used for the Schema Display: ["Relationship Properties Style Tab" on page 582](#)
- Relationship constraints can be added or modified: ["Relationship Properties Constraints Tab" on page 582](#)
- Group Permissions for the Class can be modified: ["Relationship Properties Security Tab" on page 583](#).
- Define Relationship Attributes: ["Relationship Attributes" on page 584](#).
- The Relationship can be renamed: ["Renaming a Relationship" on page 585](#).
- The Source and Target of the Relationship can be changed: ["Reversing a Relationship" on page 585](#).
- A Relationship can be deleted: ["Deleting a Relationship" on page 585](#)..
- Relationship data may be purged: ["Purging Relationship Data" on page 585](#)

Relationship Properties

Right-click on the relationship line and select **Relationship Properties** from the menu.

Change the relationship name, if desired, and edit the text in the description box.

Cardinality

Cardinality controls the number of links that can be made between objects. For example, a cardinality of 2:3 (2 for the primary cardinality and 3 for the secondary cardinality) means that no more than two links can be made from an object of the primary class to objects of the secondary class. Also, no more than three links can be made from an object of the secondary class to objects of the primary class.

To indicate that links cannot be made to objects of either the primary or secondary class, enter a value of 0 in the appropriate field.

To indicate that the number of links created to objects of either the primary or secondary class should be unconstrained, enter a value of **n** in the appropriate field.

Limited cardinality is applied between the Classes Test Case and Test Run. There may be only one Test Run for each Test Case, the cardinality for the secondary class, Test Run, is the digit 1.

See "Apply only for current Version" in [Transfer Rules](#).

Transfer Rules

Transfer rules govern what happens to an object link if you edit an object participating in the relationship. Toggling the desired values on or off sets the link transfer rules.

The following table describes the types of link transfer rules. ["Transfer Rules" on page 580](#)

Primary:

Rule Type	Description
Transfer to Child	When the primary object in the relationship is edited and replaced, the links from the primary object are copied to the new version.
Delete from Parent	When the primary object in the relationship is edited and replaced, the links from the previous version of the primary object are deleted.
Transfer to Parent on deletion of Child	If the primary object is removed, the links are transferred to the previous version of that object.
Mark Secondary as Suspect on change	When the primary object is modified, the secondary object is marked as suspect. To limit the attributes that trigger a change see attribute setting Change Raises Suspicion in chapter "Attribute Properties" on page 535 .
Mark Secondary as Suspect on Link creation	When a link is created between a primary and secondary object, the secondary object is marked as suspect. Suspicion is only raised if the status of the secondary object is current.
Mark Secondary as Suspect on Link deletion or undeletion	When the link between the primary object and the secondary object is either deleted or undeleted the secondary object is marked as suspect.
Mark Secondary as Suspect on removal from container	When the primary object is removed from a document or collection, the secondary is marked as suspect.
Populate Attributes on Create and Link	Identically named attributes will be pre-populated when using Create New & Link executed from the Actions pane or from the Link section of an open object.. To be applied, this option requires that both this Relationship Property be enabled as well as the Attribute Property "Populate on Create and Link" (see chapter "Attribute Properties" on page 535). This allows for selected classes to be prepopulated based on selected relationships.
Apply only for current Version	This option is related to Cardinality and just comes into effect if the primary Cardinality has a numeric value. If it is enabled, only primary objects with status Current are considered. If it is disabled, all versions of the primary object are considered.

Secondary:

Rule Type	Description
Transfer to Child	When the secondary object in the relationship is edited and replaced, the links from the secondary object are copied to the new version.
Delete from Parent	When the secondary object in the relationship is edited and replaced, the links from the previous version of the secondary object are deleted.

Rule Type	Description
Transfer to Parent on deletion of Child	If the primary object is removed, the links are transferred to the previous version of that object.
Mark Primary as Suspect on change	When the secondary object is modified, the primary object is marked as suspect. To define the attributes that trigger a change see attribute setting Change Raises Suspicion in chapter "Attribute Properties" on page 535 .
Mark Primary as Suspect on Link creation	When a link is created between a primary and secondary object the primary object is marked as suspect. Suspicion is only raised if the status of the primary object is current.
Mark Primary as Suspect on Link deletion or undeletion	When the link between the primary object and the secondary object is deleted or undeleted, the primary object is marked as suspect.
Mark Primary as Suspect on removal from container	When the secondary object is removed from a document or collection, the primary is marked as suspect.
Populate Attributes on Create and Link	When the primary object creates a new secondary object and links to it, attribute values are copied from the primary object to the secondary object if the attribute names (not the display names) match. This setting only applies for those attributes which have the "Populate on Create and Link" setting enabled (see chapter "Attribute Properties" on page 535).
Apply only for current Version	This option is related to Cardinality and just comes into effect if the secondary Cardinality has a numeric value. If it is enabled, only secondary objects with status Current are considered. If it is disabled, all versions of the secondary object are considered.

Relationship Properties Style Tab

Right-click on the relationship line, select **Relationship Properties** from the menu and choose the Style Tab.

It is possible to change the font, size, color and style, as well as the color and width of the relationship line.

Relationship Properties Constraints Tab

Relationship constraints allow rules to be created that govern the creation of links between objects of the primary and secondary class.

Depending on the type of rules necessary for the process defined, it is also possible, if using Workflow, to define workflow transitions to force relationships before an object is transitioned, see ["Creating and Editing Workflows" on page 589](#).

To add a constraint:

- 1 Click **OR** or **AND** in the **Attribute Constraints** area to specify the type of logical relationship you are about to specify.
 - OR: If one of the constraints matches, the link will be created.
 - AND: If all of the constraints match, the link will be created.

- 2 Click the  to Add a new Constraint.

A new row is added to the table and the **Class** and **Attribute** menus are populated based on the relationship you selected. Click on these cells to select first the class, and then the attribute values from a drop-down menu.

- 3 Click in the **Constraint** cell and select the desired constraint type from the drop-down menu.

The following constraint types are available:

- **=** The attribute *exactly* equals the value.
- **!=** The attribute does **not** equal the value.
- **Like** The attribute includes the value as part of a larger string.
When using **Like**, you would include one or more asterisks (*) as wild cards to indicate where the value fits into the larger attribute string.

Examples:

- *UNIX would **include** any value ending with UNIX, e.g. HP-UNIX
- *UNIX* would **include** any value that contains UNIX, e.g. HP-UNIX, HP-UNIX-11, UNIX-11
- UNIX* would **include** any value starting with UNIX, e.g UNIX-11
- **Not Like** The attribute **must not** include the value as part of a larger string.
When using **Not Like**, you would include one or more asterisks (*) as wild cards to indicate where the value fits into the larger attribute string.

Examples:

- *UNIX would **exclude** any value ending with UNIX, e.g HP-UNIX
 - *UNIX* would **exclude** any value that contains UNIX, e.g. HP-UNIX, HP-UNIX-11, UNIX-11
 - UNIX* would **exclude** any value starting with UNIX, e.g UNIX-11
- 4 Click in the **Value** cell. If the selected attribute is a list, select the value from the list of values displayed; otherwise, type the value into the cell.



NOTE

If using a **Like** or **Not Like** constraint, use asterisks as wild cards.

- 5 **apply on link creation only:** Select this option to limit the constraint to when a link is being created.

- 6 Click **OK**.

To delete a constraint, Click on the **Trashcan** at the end of the row.

To change an existing constraint rule, Click the cell to be changed and modify the value.

Relationship Properties Security Tab

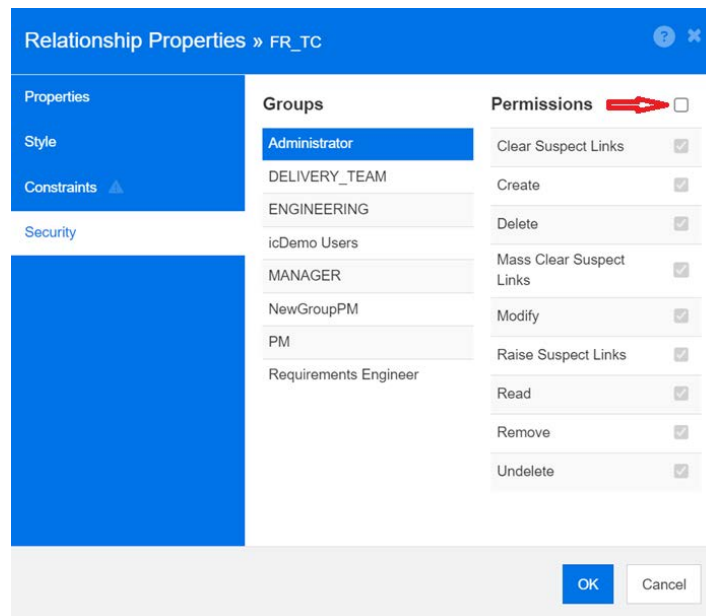
Setting Group Permissions on the Relationship

In Dimensions RM users are defined and assigned to groups. The assignment of group permissions can be specified for each group within each relationship, or more generally by group with permissions applied across relationships. The choice, once again, depends on process.

Should all groups be able to **Mass Clear Suspect Links**? Perhaps that is something that only designated power users should be able to do. Or all permissions may be checked for certain classes, e.g., testing related classes for the QA group.

To change the class security settings, right-click on the class, choose **Class Properties**, and select the **Security** tab.

Select a group from the left column and set permissions on the right. It is possible to check the permission box to set for all.



Relationship Attributes

Relationships, like all Class objects, are history controlled. Relationships are defined with a set of implicit objects defined to track the current version, who created it and when. The solution ensures that a relationship contained in a baseline is modified only with the addition of a new version, while the baselined object remains immutable.

User attributes may be added to relationships for storing information beyond that controlled by the implicit attributes.

To add attributes to a relationship:

- Right-click on the relationship line and choose **Attributes**,
- **or** use the Attribute Settings function from the Administration menu, and choose **Show Relationships** from the bottom of the class list. Choose the relevant relationship from the list.

For details see ["Attribute Definition" on page 533](#).

Renaming a Relationship

The relationship name should describe the data you intend to associate with the relationship. Each relationship name must be unique to the instance schema.

To rename a relationship, execute these steps:

- 1 Right-click the relationship and select **Rename** from the shortcut menu. This opens the **Rename** dialog.
- 2 Enter a unique name for the relationship, consistent with local and solution conventions. For example, some teams choose to use standard abbreviations with the link direction: BRtoFR. Or, some teams prefer to show breakdown: BRelicitsFR.

See ["Naming Conventions for Relationships" on page 611](#)

- 3 Click **OK** to change the relationship name.
- 4 If you finished your changes, click  to save the instance schema.

Reversing a Relationship

If the information does not seem to flow in the direction intended when the relationship was created, it can be reversed.

To reverse a relationship, execute these steps:

- 1 Right-click the relationship and select **Reverse** from the shortcut menu.
- 2 Select one of the following options. The selected option is applied to all existing links when the relationship is reversed.
 - **Retain Links:** Reverses the direction of the relationship while leaving all existing links in place.
 - **Remove Links:** Reverses the direction of the relationship, and removes all existing links for the relationship.

Deleting a Relationship

Deleting (removing) a relationship removes the relationship from the schema, and also removes all links associated with the relationship. **Deleting a relationship is forever.**

To delete a Relationship from the instance schema:

- 1 Right-click the Relationship (line) to be deleted.
- 2 Select **Delete**; this opens the **Confirm delete** dialog.
- 3 Click **OK** to delete the relationship.

Purging Relationship Data

Purging a relationship removes all links created using the relationship, but leaves the relationship itself defined in the instance.

To purge the links from a relationship:

- 1 Right-click the relationship and select **Purge** from the shortcut menu. This opens the **Purge Data** dialog.

- 2 Click **Purge** to delete all links for this relationship.
- 3 When purging has been completed successfully, a check mark shows the success.
Should purging fail, an "x" shows the failure. Hover over the "x" to get further information about the failure.
- 4 Click **OK** to close the **Purge Data** dialog.

Creating Product and Project Classes

The **Product Class** provides a method for managing all artifacts associated with a release, application or component.

The **Product** class is used to support both **Agile** development, and application branching.

The **Project** classes are created, primarily, in support of branching.

Agile: Requires the **Product** class. The Product *ePhoto - iPhone App* is included in the sample instance AGILE_RMDemo, and presents an example of Agile development using Dimensions RM. To create Products for use with Agile see ["Adding Agile Products" on page 440](#).

Branching: Requires **Product** and **Project** classes. In the RMDemo sample instance a Product CloudPhoto has been created, in conjunction with the Project CloudPhoto, demonstrates branching functions. To create Products for use with Branching see ["Creating Product and Project Classes for Branching" on page 586](#).

Requirement to Product Assignment: Requires the **Product** class (without branching). To create Products for use without Branching see ["Creating Product or Project Classes without Branching" on page 587](#).

Requirement to Project Assignment: Requires the **Project** class (without branching). To create Projects for use without Branching see ["Creating Product and Project Classes for Branching" on page 586](#).

Creating Product and Project Classes for Branching

If you are unfamiliar with the creation of new classes, detail Instructions can be found in ["Schema Class Creation" on page 570](#).

- 1 Select Schema Definition from the Administration menu to open the Instance schema.
For details, see ["Opening and Unlocking the Instance Schema" on page 568](#).
- 2 From the desired location on the schema grid, right click and select Add Class.
- 3 From the menu, select **Product**.
- 4 The Class Name will default to the class type, we recommend that you accept the name: **Product**.
- 5 Save the Schema.
- 6 Right-click on the Product Class and choose Class Properties, Check the box next to the Option **Create Parent category**
- 7 Repeat Steps 2-6, selecting **Project** rather than Product.
- 8 Click  to save the schema definition.

The special Classes **Product** and **Project** should now be listed and be selectable in the Category tree. They look like categories - but provide much more functionality. The Product Class entries that will be defined under Products and Projects are typically assigned special icons; you may also consider using a different color to clearly differentiate these products and projects from standard categories. Please see ["Adding a Category Icon" on page 520](#).

Within this special Product Category, the team will create entries from the Product class.

Creating Product or Project Classes without Branching

- 1 Open the instance schema (see chapter ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 **To create the Product class:**
 - a Add a class based on the **Product** type (see chapter ["Defining a Class" on page 571](#)) and give it a name that matches your needs (e.g. *Products*).
 - b Continue with point 4.
- 3 **To create the Project class:** Add a class based on the **Project** type (see chapter ["Defining a Class" on page 571](#)) and give it a name that matches your needs (e.g. *Projects*).
- 4 If you do not plan to use branching at a later time, you can make the following modifications, because the short name is not required when creating a product or project:
 - a In the **Attributes Definition** dialog (see chapter ["Attribute Definition" on page 533](#)), select the class you just created (*Products* or *Projects*).
 - b Select the **Short Name** attribute.
 - c Clear the following options:
 - **Attribute Mandatory**
 - **Display For Entry**
 - d Click **Save** to save your changes.

Creating the Risk Class

Risk Management is a core discipline in Business Analysis and Systems Engineering whose function is to identify, analyze, and evaluate risks that could negatively impact the product outcome.

To implement Risk Management a class of type: **Risk** is available in Schema Definition. As with all class types defined for use within the solution, this class has been populated with suggested attributes, which may be modified to meet the needs of the local process.

If you are unfamiliar with the creation of new classes, detail Instructions can be found in ["Schema Class Creation" on page 570](#).

- 1 Select Schema Definition from the Administration menu to open the Instance schema (if there are issues, see ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 From the desired location on the schema grid, right click and select Add Class.

- 3 From the menu, select **Risk**. The default Risk class contains the User Defined Attributes included in the table below, any or all of which may be modified (see ["Attribute Definition" on page 533](#)).
- 4 The Class Name will default to the class type, depending on local conventions the name can be changed to e.g., Risk_Mgt or left as simply **Risk**.
- 5 Click  to save the instance schema.
- 6 Based on process and reporting for Risk Management and Release reporting, do the following for each class containing objects that may be linked to Risks.
 - a From the **New** menu, select **Relationship**.
 - b Select the class you want to associate with the Risk class, then select the *Risk* class.
 - c Enter a unique name for the relationship that should describe the data you intend to associate with the relationship. For example, you may be linking a Business requirement with operational or market risks.
 - d Click **OK** to add the relationship to your instance schema.
 - e Double-click the relationship to open the **Define Relationship** dialog.
 - f Select the **Properties** tab.
 - g Ensure, that for **Primary** and **Secondary**, the option **Transfer to Child** is selected.
- 7 Click **OK**. Click  to save the instance schema.

Supporting Comments

Comments can be added to chapters or requirements. Comments allow to discuss topics regarding a requirement or chapter. Rather than just discussing the topics by e-mail or personally, this allows to review all comments at any time, e.g. during an approval process.

Adding the Comment Class and Relationships

The following steps describe how to add the Comment class and to create the relationships with the classes for which you want to support comments. You are free to change the name the Comment class in your schema.



CAUTION!

Class names must follow the conventions specified in ["Naming Conventions for Classes" on page 610](#)

Relationship names must follow the conventions specified in ["Naming Conventions for Relationships" on page 611](#).

Execute the following steps:

If you are unfamiliar with the creation of new classes, detail Instructions can be found in ["Schema Class Creation" on page 570](#).

- 1 Select Schema Definition from the Administration menu to open the Instance schema (if there are issues, see ["Opening and Unlocking the Instance Schema" on page 568](#)).
- 2 From the desired location on the schema grid, right click and select Add Class.
- 3 Move the cursor to where you want to place the class and click the left mouse button. This opens the **Add Class** dialog.
- 4 In the **Add Class** dialog, enter a unique class name, one that describes the data to be held. For the Comment class, we recommend Comment or Discussion.
- 5 Click **OK** to add the class to the instance schema.
- 6 Click  to save the instance schema.
- 7 The Comment Text is defined as mandatory, as there would be no value in a empty comment. Should your Comment process require a **Comment Subject** as well, that attribute should be defined as mandatory. For details see ["Attribute Definition" on page 533](#).
- 8 Do the following for each class that shall support Comments:
 - a From the **New** menu, select **Relationship**
 - b Select the class you want to use comments with, then select the *Comment* class. This opens the **New Relationship** dialog.
 - c Enter a unique name for the relationship that should describe the data you intend to associate with the relationship.
 - d Click **OK** to add the relationship to your instance schema.
 - e Double-click the relationship to open the **Define Relationship** dialog.
 - f Select the **Properties** tab.
 - g Ensure, that for **Primary** and **Secondary**, the option **Transfer to Child** is selected.
 - h Click **OK**.
- 9 Click  to save the instance schema.

Creating and Editing Workflows

In Dimensions RM workflows are implemented in order to ensure that requirement objects and containers (documents, collections, etc.) meet a defined set of criteria before they reach an approved state. Workflow states allow users to track progress, as well as to control the process. Constraints may be placed on specific attributes and/or relationships ensuring that links are created, attributes populated or transitions controlled by users with specified roles.

For example, a functional requirement may not be transitioned from Draft to a Review State unless it contains a title, a description, a verification method, and a relationship to a change request or business requirement.

Workflows are often defined by the project teams, and implemented by the Instance Administrator using the Schema Definition.

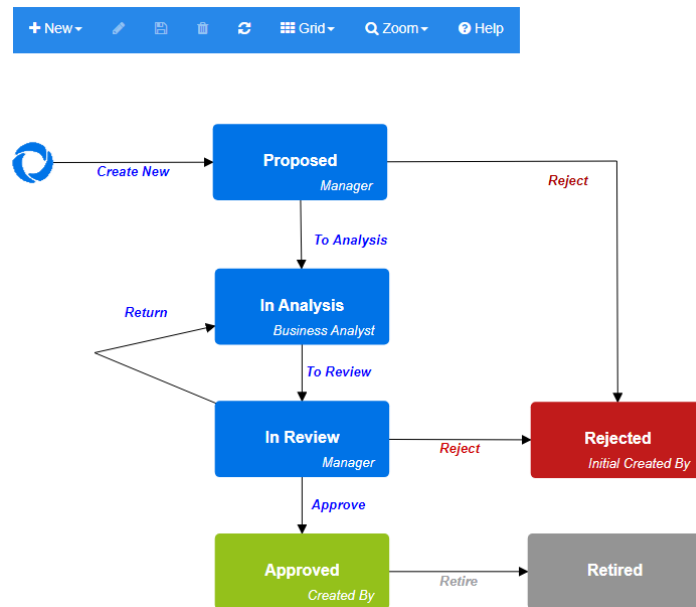


Figure 12-11. Workflow for sample class *Product_Requirements*

This section contains the following:

- ["Creating a Workflow" on page 590](#)
- ["Workflow States" on page 592](#)
- ["Workflow Transitions" on page 594](#)
- ["Deleting a Workflow" on page 603](#)
- ["Using Containers with Workflows" on page 603](#)

Creating a Workflow

Workflows are created for a class. It is not possible to create one workflow which handles several classes, although workflows can be copied from one class to another using the Class Definition tool from RM Manage (see ["Copying a Workflow to another Class" on page 817](#)).

Workflows intended for use by Containers (Documents, Collections, Baselines or Snapshots) are created using the Workflow Container class, see [Using Containers with Workflows](#). Once the Workflow Container Class has been created, the process for defining the workflow states and transitions are the same as those implemented for any class.

Workflow Elements

A workflow consists of two elements: states and transitions.

State: A state is a position in a workflow where a requirement resides. While a requirement resides in a given state, it has an owner who is responsible for performing a specific task with the requirement.

Transition: A transition activates the movement of a requirement from one state to another in the workflow.

To create a workflow, follow these steps:

- 1 Select **Schema Definition** from the **Administration** menu.
- 2 Right-click the desired class and select **Class Properties**
- 3 Ensure that the **Enable Workflow** option is selected.
- 4 Click the **Workflow Definition** button.
- 5 A new workflow will open with a "New" State, click inside the State to access its properties.
 - a Use the Properties tab to change the State Name to Draft.
 - b From the New menu, choose State and click into a space to the right of Draft.
 - c Name the second state Review.
 - d From the New menu, choose Transition, click once into Draft and move the mouse to click once into the Review State.
 - e The Add Transition dialog is raised, give the transition a name, e.g., ToReview.
 - f Click  to save the changes.

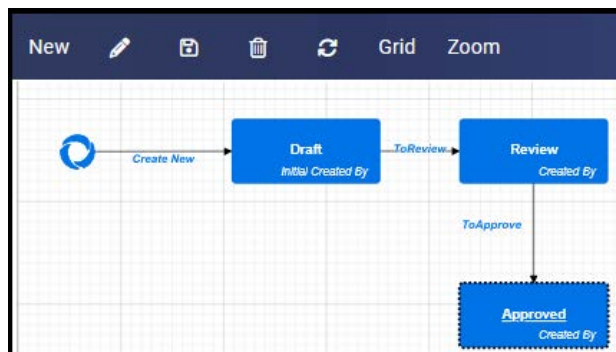


Figure 12-12. After Adding Approved, this is our Workflow

- 6 There is much more to be done with each State and Transition, this will get you started.
- 7 Close the **Workflow Definition** dialog.
- 8 Click OK, or Cancel, to close the Class Properties dialog - if there is nothing more to be saved, you will have to Cancel.
- 9 Close the **Schema Definition** dialog.

You may proceed to:

- ["Workflow States" on page 592](#)
- ["Workflow Transitions" on page 594](#)

Workflow States

Changing a Workflow State Definition

To change a state definition you can either double click the state or right-click the state and select **Properties** from the shortcut menu.

From the Properties Dialog you can change:

["Workflow State Property Settings" on page 592](#)

["Workflow State Style Settings" on page 592](#)

["Workflow State Transitions Settings" on page 592](#)

["Workflow State Form Settings" on page 592](#)

["Workflow State Security Settings" on page 593](#)

["Deleting a Workflow State" on page 593](#)

Workflow State Property Settings

Double click on a Workflow State, or right-click and choose State Properties to access the **State Properties > Properties** tab.

The **Properties** tab allows you to change the following settings:

Name: Changing the value in the Name box renames the workflow state.

Description: Enter or change the description to describe the purpose of the state. The description is used as a tooltip displayed when hovering over the state in the State History of a form.

Owner: The transition owner may be assigned based on creator, modifier, or by applying the content of one of the User Attributes types, e.g., Author, or assigned Approver. It is possible to restrict the transition to an owner, or a group.

Workflow State Style Settings

The **Style** tab allows you to change the following settings:

Label: Defines the font used for the label. The label font is only used with the state diagram.

Owner: Defines the font used for the owner. The owner font is only used with the state diagram.

Icon: Defines the color used for the state icon. The icon color is used for the state diagram and for the workflow state tag in lists.

Workflow State Transitions Settings

The **Transitions** tab allows you to change the order transitions are shown on the form:

Select a transition and click  or  to change the order.

Workflow State Form Settings

The **Form** tab allows access to the following settings:

Sections: Defines the Sections shown when a requirement, in this state, is opened.

Attributes: Defines the attribute processing, as described below.

Setting	Description
Display	Display the attribute if its parent section is also displayed. NOTE If you choose to hide (not display) attributes on selected workflow forms, please test the display. Whether working with modified forms or not, the format of the display will change when attributes are hidden; a change in display can be confusing to the users. If there are attributes that should be hidden at various states in the process, consider placing those attributes into a single section. This will allow suppression of the section without affecting the display of individual attributes on the form.
Editable	The attribute can be modified on the transition form.
Mandatory	The attribute must have a value in order to complete the transition.
Clear Value	The attribute will be cleared during the transition. For example, a status attribute maintained during a review process may be cleared prior to final review.

Workflow State Security Settings

The settings on the **Security** tab allow the administrator to define which group can read, save or modify a requirement within the selected state.

Transaction	Definition
Read	The user can see the data of the requirement.
Save	The user can replace attribute values of the requirement.
Save if Owner	The user can replace attribute values of the requirement if he or she owns it.
Update	The user can update attribute values of the requirement.
Update if Owner	The user can update attribute values of the requirement if he or she owns it.

The dialog provides a facility to select each group and then add or remove all permissions for that group.

For additional information see ["Managing Groups" on page 511](#).

Deleting a Workflow State

A state can only be deleted if no requirement is assigned that state.

To delete a state, follow these steps:

Select the state you want to delete.

Press the Delete key or right-click the state and select **Delete** from the shortcut menu.

Confirm.

Workflow Transitions

Workflow transitions provide a mechanism to transition objects (individual requirements, or containers) from one state to another, e.g., from **Draft** to **Review**.

Adding a Workflow Transition

In order to add and manipulate rules for transitions, you need at least 2 states in your workflow diagram. Let us start with the simple workflow states: Draft and Review.

To add a transition, follow these steps:

1 From the **New** menu, select Transition .

2 Click once into the first state (e.g., Draft).

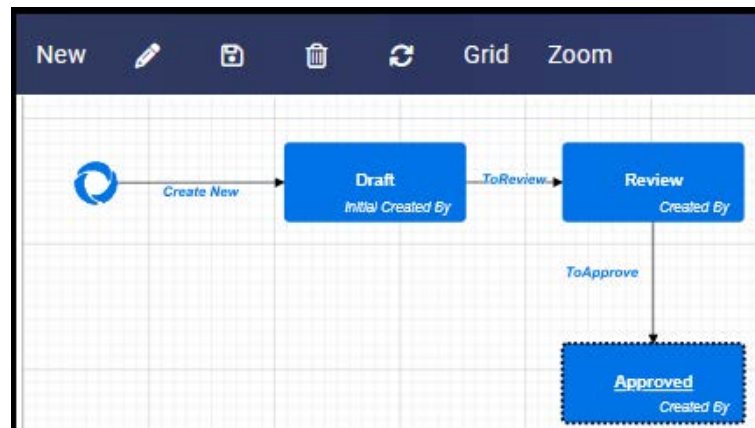
3 Move the mouse to the second state (e.g., Review).

An "angled" transition arrow (e.g. a 90° angle) can be added by clicking at points along the route from the first to the second state.

4 The Add Transition dialog is raised, give the transition a name, e.g., ToReview.

5 Click  to save changes.

In the Section [Creating a Workflow](#), a simple Workflow was created.



Right click on the transition line titled ToReview, connecting Draft to Review. From here you may select:

- Transition Properties consist of:

- [Workflow Transitions Properties](#)

Change the transition name and/or description.

- [Workflow Transitions Style](#)

Change the font, color and size of the transition line and label.

—[Workflow Transitions Form](#)

Define the transition type, the sections of the form displayed, and the attributes mandatory prior to a transition.

—[Workflow Transitions User Fields](#)

Assign or remove users to or from defined roles during transitions.

—[Workflow Transitions Attribute Constraints](#)

Constrain the transition based on attribute content, or lack thereof.

—[Workflow Transitions Relationship Constraints](#)

Constrain the transition based on relationships (e.g., a test case must exist before a functional requirement may be transitioned or all objects in a document must be approved before the document is approved).

—[Workflow Transitions Security](#)

Identify the groups with permission to manually transition elements.

- **Rename** - allows the title of the transition to be changed
- **Delete** - deletes the transition

Workflow Transitions Properties

The Workflow Transition Properties dialog includes the transition name, description and an option to include transitions in the drop-down, even if they cannot be completed.

Show transition if Constraints are not met

The default is not to include transitions on the selection list until constraints have been met, but the absence of that next transition step can be confusing to users expecting the choice to be available.

Enabling this option will allow the transition to be included in the list, but, when selected, a warning will be raised indicating a failed transition and why, see [Figure 12-13](#).

To update transition properties:

- 1 Right-click and choose Transition Properties or
Double click the Transition arrow to access the **Transition Properties > Properties** tab.
- 2 Enter the new name into the **Name** box.
- 3 Enter or modify the description.
- 4 Enable the optional setting: **Show Transition if Constraints are not met**.
Enter a message indicating the reason for transition failure.
- 5 Click **OK**.

Transition Properties » Approve

Properties

Style
Form
User Fields
Attribute Constraints
Relationship Constraints
Security

Name: ✓
Approve

Description:
The Product Manager approves the business requirement

☒ Show transition If Constraints are not met

Warning message:
All linked Functional must be In Review before this transition can be completed.

OK Cancel

Figure 12-13. When Constraints are not met, the Transition will fail.

Workflow Transitions Style

The **Style** tab allows changes to the following settings:

Line: Defines the style of the arrow line visualizing the transition. The line style is only used with the state diagram.

Label: Defines the font used for the label; this font is only used with the state diagram.

Workflow Transitions Form

The workflow transition form is populated with the sections defined for the source class in the transition, as well as the custom attributes defined for the class. This dialog allows administrators to expand transition rules, allowing administrators to set transition rules based on content.

- **Enable Quick Transition:**

A **Quick transition** causes the requirement to be automatically transitioned as soon as all mandatory criteria have been met. If, for example, a transition from Draft to Review requires that attributes Title, Description and Analyst be populated. Those attributes will be set to **Mandatory** in the 'Transition to Review' and when they are populated, the transition will occur without additional intervention.

- **Enable the Electronic Signature:**

If enabled, on a transition, the user executing the transition must confirm their identity by entering their password. The confirmation will be displayed in the transition details as well as in the state History

- **Sections:**

Indicates the sections to be displayed when the requirement is opened for review during a manual transition or one that requires an electronic signature.

- **Attributes**

The requirement attributes are listed with one or more of the following settings enabled.

Setting	Description
Display	Display the attribute if its parent section is also displayed. Manual transitions open the requirement form. It is possible to uncheck the Display box for a requirement, causing it not to be displayed with the form, although the section containing it is displayed. This modification in the standard display can cause confusion. It might be better to allow the display of the attribute but make it un-editable, if it should not be changed during the transition.
Editable	The attribute can be modified on the transition form.
Mandatory	The attribute must have a value before the requirement can be transitioned.
Clear Value	The attribute content will be cleared as part of the transition. For example, a status attribute maintained during a review process may be cleared prior to the test phase.

Workflow Transitions User Fields

The settings on the **User Fields** provide a facility for assigning or moving users between attributes during transitions, thus allowing the team to maintain critical information as well as to enforce process.

User Fields allow the team to remove or to assign users to various roles during transitions. For example, the author, the person responsible for writing a requirement and submitting it for review is removed from the set of people available as Reviewer or Approver.

The Reviewer, at the next transition will be removed from the Approver list - ensuring that each role is fulfilled by a different user.

In situations where a different individual is assigned a role during each release process, the person fulfilling that role, in the example Product Manager, may be automatically assigned to other roles, in this example, the role of approver.

Hopefully, we have given you the tools to create a process that works in your environment.

Figure 12-14. Sample Settings: Transition To Review

The following options are available:

Add current user to user field(s):

- **Single value list:**

The selected user attributes will show the user executing the transition.

In the example above, the user responsible for creating the requirement and transitioning it for review, will be assigned the role of Author, a list that does not allow multiple entries.

- **Multiple values list:**

Adds the current user to the selected lists.

Remove current user from user field(s):

- **Single value list:**

If any of the selected user attributes holds the user executing the transition, the user attribute will be cleared.

- **Multiple values list:**

The user executing the transition is removed from selected lists. In the example above, the user executing the transition, now the Reviewer, is removed from the Approver list.

Remove selection from user field(s):

- **Single value list:**

The selected user attributes will be cleared.

- **Multiple values list:**

All users will be deselected on the selected user attributes.

Workflow Transitions Attribute Constraints

To change the attribute constraint settings, select the **Attribute Constraints** tab. By creating or modifying attribute constraints you define under which conditions the transition can be executed.

- 1 Click **OR** or **AND** in the **Attribute Constraints** area to specify the type of logical relationship you are about to specify.
- 2 Specify the constraints as described in the following sections.
- 3 Click **OK**.

To add a new attribute constraint:

- 1 Click  in the **Attribute Constraints** area.

A new row is added to the table and the **Attribute** cell is populated. If needed, click on the **Attribute** cell to select a different attribute from a drop-down menu.

- 2 Click in the **Constraint** cell and select the desired constraint type from the drop-down menu. The following constraint types are available:

= The attribute *exactly* equals the value.

!= The attribute does NOT equal the value.

Like The attribute includes the value as part of a larger string.

When using Like, use asterisks as wild cards.

When using Like, you would include one or more asterisks (*) as wild cards to indicate where the value fits into the larger attribute string. For example, taken in order, these values: *UNIX, *UNIX*, or UNIX* would match with these attributes: HP-UNIX, HP-UNIX-11, or UNIX-11.

Null The attribute does not contain a value.

Not Null The attribute contains a value.

- 3 Click in the **Value** cell.

If the selected attribute is a list, select the value from the list of values displayed; otherwise, type the value into the cell.

- 4 The **Auto** cell is a Yes-No check-box:

No: The transition is executed by selecting the transition button.

Yes: The transition is executed automatically for requirements in the "Current" state, once all constraints have been met. For automatic transitions, the user interface will show no button for the transition.

Please Note: The use of automatic execution on multiple transitions originating from a single workflow state is NOT recommended.

- 5 Click **OK**.

To delete an attribute constraint:

- 1 Click  in the row of the constraint you want to delete.
- 2 Click **OK**.

To change an existing attribute constraint rule:

- 1 Click the cell to be changed and modify the value.
- 2 Click **OK**.

Workflow Transitions Relationship Constraints**CAUTION!**

It is not recommended to use automatic execution on multiple transitions originating from the same Workflow state.

By creating or modifying constraints you define under which conditions the transition can be executed.

To change the relationship constraint settings, select the **Relationship Constraints** tab.

To add relationship constraints:

- 1 Click **OR** or **AND** in the **Relationship Constraints** area to specify the type of logical relationship you are about to specify.
- 2 Specify the constraints as described in the following sections.
- 3 Click **OK**.

To add a new relationship constraint:

- 1 Click  in the **Relationship Constraints** area to add a new row to the table.
- 2 Click into the **Triggering Class** cell and select the class from the drop-down menu for which you want to define the constraint.
- 3 Click into the **Triggering Attribute** cell and select the attribute from the drop-down menu for which you want to define the constraint.
- 4 Click in the **Constraint** cell and select the desired constraint type from the drop-down menu. The following constraint types are available:

= The attribute *exactly* equals the value.

!= The attribute does NOT equal the value.

Like The attribute includes the value as part of a larger string.

When using Like, use asterisks as wild cards.

When using Like, you would include one or more asterisks (*) as wild cards to indicate where the value fits into the larger attribute string. For example, taken in order, these values: *UNIX, *UNIX*, or UNIX* would match with these attributes: HP-UNIX, HP-UNIX-11, or UNIX-11.

- 5 Click in the **Value** cell. If the selected attribute is a list, select the value from the list of values displayed; otherwise, type the value into the cell.
- 6 If desired, click into the **Execute When** cell and select a different value from the drop-down menu. The following selections are available:

At least one: Executes the transition if one linked requirement fulfills the constraint.

All: Executes the transition if all linked requirements fulfill the constraint.

All or Not Linked: Executes the transition if all linked requirements fulfill the constraint or no requirements of the class (specified in the **Triggering Class** cell) are linked.

- 7 If desired, click into the **Auto** cell and select a different value from the drop-down menu.

The following selections are available:

No: The transition is executed by clicking the transition button.

Yes: The transition is executed automatically if the requirement is in state "Current". The user interface shows no button for the transition.

- 8 Click **OK**.

To delete an relationship constraint:

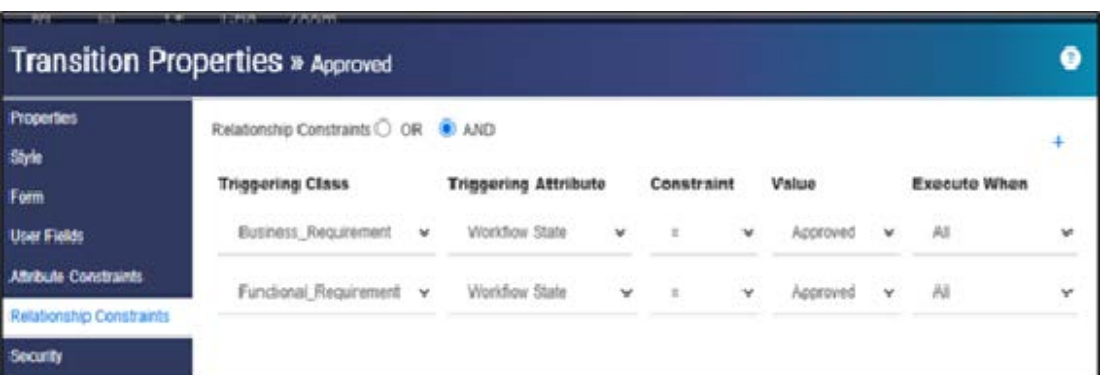
- 1 Click  in the row of the constraint you want to delete.
- 2 Click **OK**.

To change an existing relationship constraint rule:

- 1 Click the cell to be changed and modify the value.
- 2 Click **OK**.

Use Case: Automatic Transitioning of a Document when all contained objects have been approved.

The process can be applied to any container assigned a workflow.



Triggering Class	Triggering Attribute	Constraint	Value	Execute When
Business_Requirement	Workflow State	=	Approved	All
Functional_Requirement	Workflow State	=	Approved	All

To configure automatic transitioning of requirements:

- 1 To open the Schema Definition dialog, select **Schema Definition** from the **Administration** menu.

- 2 Right-click the **Workflow Container** Class used by documents.
- 3 Choose **Class Properties** from the menu.
- 4 Open the workflow by clicking the **Workflow Definition** button.
- 5 Open the **transition** you want to execute (e.g., *To Approval*) by using one of these methods:
 - Double-click the transition
 - Right-click the transition and select **Transition Properties...** from the shortcut menu
- 6 Select the **Relationship Constraints** tab.
- 7 Click  in the **Relationship Constraints** area to add a new row to the table.
- 8 Click into the **Triggering Class** cell and select the a class that is contained (or might be contained) in the document e.g., *Business_Requirement*.
- 9 Click into the **Triggering Attribute** cell and select the **Workflow State** attribute from the drop-down menu.
- 10 Ensure that the **Constraint** cell shows **=**.
- 11 Click into the **Value** cell. Select the workflow state to which you transition the requirement (e.g. *Approved*).
- 12 Click into the **Execute When** cell and select **All**.
- 13 Scroll to the right, click into the **Auto** cell and check the box.
- 14 Repeat steps 7-13 until all classes that are included or might be included in the document are listed.
- 15 Click **OK**.
- 16 Click  to save your changes.

Workflow Transitions Security

To change the security settings, select the **Security** tab. The security settings define which group can execute a transition of the selected state.

Transaction	Definition
Execute Transition	The user can execute this transition.
Execute Transition if Owner	The user can execute this transition if he or she owns the requirement.
Execute Transition if Submitter	The user can execute this transition if he or she submitted the requirement.

Deleting a Workflow Transition

To delete a transition, follow these steps:

- 1 Right-click the transition and select **Delete** from the shortcut menu.

- 2 Confirm the following dialog.

Deleting a Workflow

A workflow can only be deleted if there are no requirements within any state of that workflow. If this is not the case, the workflow can only be disabled.

To delete a workflow, follow these steps:

- 1 Select **Schema Definition** from the **Administration** menu. This opens the **Schema Definition** dialog.
- 2 Right-click the desired class and select **Class Properties...** from the shortcut menu. This opens the **Class Properties** dialog.
- 3 Click the **Workflow Definition** button. This opens the **Workflow Definition** dialog.
- 4 Delete all states and transitions except the **New** state.
- 5 Click  to save your changes.
- 6 Close the **Workflow Definition** dialog.
- 7 In *Class Properties* » 'Class Name' dialog, clear the **Enable Workflow** box.
- 8 Click **OK** to close the *Class Properties* » 'Class Name' dialog.
- 9 Click  to save the schema definition.

To disable a workflow, follow these steps:

- 1 Select **Schema Definition** from the **Administration** menu. This opens the **Schema Definition** dialog.
- 2 Right-click the desired class and select **Class Properties...** from the shortcut menu. This opens the **Class Properties** dialog.
- 3 Clear the **Enable Workflow** box.
- 4 Click **OK**.
- 5 Click  to save the schema definition

Using Containers with Workflows

Workflows can be defined and assigned to requirement objects, and they can also be defined and applied to containers. To define a workflow that will be used to track the progress of containers (documents, collections, and baselines), you must first create a class to which the workflow will be assigned. The **Workflow_Container** class is available to address that need.

For collections or documents an approval process can be defined such that, for example, a document can be submitted for review, approved by reviewers and then baselined and submitted to stakeholders.

To create the Workflow_Container class, do the following:

- 1 Select **Schema Definition** from the **Administration** menu.
- 2 In the **Schema Definition** dialog, right-click on a free space and select **Add Class | Workflow_Container** from the shortcut menu.
- 3 Click on a free space to place the new class.
- 4 Change the name to your liking, e.g. *Approval*, or *Document_Approval*.
- 5 Click  to save the schema definition.
- 6 You can extend the definition of the *Workflow Container* class by adding custom attributes.
For further information on adding attributes, see ["Attribute Definition" on page 533](#).
- 7 Add a workflow to the *WorkFlow_Container* class as described in ["Creating a Workflow" on page 590](#).

Once the workflow has been defined for the *Workflow_Container* class, it will be available for assignment when creating or editing the properties for a document or collection.

Administrative Tools

The following functions are available from the Administrative Tools menu accessible from the RM Browser Administration drop-down for members of the System Administrator Group. For details, see ["About Instance Administration" on page 506](#) for details.

The Administrative Tools menu includes:

- Certificate Update:
Updating the Open Text Common Tomcat Server certificate. For details see ["Updating the Tomcat Certificate" on page 605](#).
Updating the SSO Certificates. For details see ["Updating the SSO Certificates" on page 606](#).
- Manage Services - Allows System Administrators to manage Dimensions RM related services. For details see ["Managing RM Services" on page 607](#)
- Process Log - Status for Dimensions RM services. For details see ["RM Process Log" on page 607](#)
- Log Files - Access for review and/or download all Dimensions RM log files. For details see ["Accessing Log Files" on page 608](#)
- Administrative Audit - Provides access to administrative level changes, including user related changes, categories, and schema. For details see ["Accessing Administrative Audit" on page 608](#)
- Banner - Create an informational banner to alert users to new functionality, system upgrades or maintenance. For details see ["Defining an RM Banner" on page 609](#)

Updating the Tomcat Certificate

The following describes how to update the certificates for Open Text Common Tomcat used for HTTPS connections. As Open Text Common Tomcat always has certificates installed, this function can be used for the initial certificate setup of your server.

To update the Open Text Common Tomcat server certificate:



IMPORTANT!

- Before you begin, ensure that all prerequisites are met (see ["Tomcat Certificate Prerequisites" on page 606](#)).
- Access to Certificate Update, available through the Administrative Tools menu, requires System Administrator access. Please see ["About Instance Administration" on page 506](#) for details.

- 1 From the **Administration** menu, select **Administrative Tools**, accessible from the RM Browser Administration drop-down for members of the System Administrator Group.
- 2 Choose **Certificate Update**.
- 3 Click **Browse...** to open the file upload dialog.
- 4 Select the PFX file with the certificate and click **Open**.
- 5 Enter the password for the PFX file into the Certificate Password box.
- 6 Click **Retrieve Alias** to read the certificate alias from the PFX file.
- 7 The **RM Server Name** box shows the server name you used to log in to Dimensions RM.

You **must** ensure that this server name is the full server name.

Example:

You logged in with *myserver*, but the server name **in the certificate** is *myserver.mycompany.com*. In this case, you would have to fill *myserver.mycompany.com* into the **RM Server Name** box.

- 8 Click **Update Certificate** to start the certificate update.



NOTE

- This update will include a restart of Tomcat, which will interrupt work for Dimensions RM users, or users of any other web application running on Open Text Common Tomcat.
- Should the certificate update fail, the previous certificate is restored.

- 9 Click **OK** to confirm the warning message.
- 10 Wait until the **Certificate Update** dialog reports completion of the update process.

Tomcat Certificate Prerequisites

All of the following prerequisites must be met to successfully import the certificates:

Your Dimensions RM server uses an **unmodified Open Text Common Tomcat** setup.

The certificate file is in PFX format.

You know the password of the PFX file.

The certificate is from a well-known Certification Authority, that is accepted by the Windows server running Dimensions RM. For self-signed certificates, you must **import the certificate into the Trusted Root Certification Authority** store before you can update the Tomcat server certificate.

Users of all web applications running on Open Text Common Tomcat are informed that the server is down for some minutes and they cannot work on that server for that time.

Updating the SSO Certificates

The following chapter describes how to update the SSO certificates for use with Solution Business Manager (SBM) and Dimensions CM.



CAUTION!

Do not use this updater when using **Windows SSO**. For updates of certificates for Windows SSO, refer to the *section "Configuring Windows SSO" on page 920*.

Access to Certificate Update, available through the Administrative Tools menu, requires System Administrator access. Please see *"About Instance Administration" on page 506* for details.

Prerequisites: Before you begin, ensure that the following prerequisites are met.

- SSO has been enabled.
- Your Dimensions RM server uses an unmodified Open Text Common Tomcat setup.
- The certificate files for Gatekeeper and Federation Server are in CER format.
- The certificate for STS is in PEM format.
- The certificates are from a well-known Certification Authority, that is accepted by the Windows server running Dimensions RM. For self-signed certificates, you must import the certificates into the **Trusted Root Certification Authority** store before you can update the SSO certificates.

Users of all web applications running on Open Text Common Tomcat should be informed that the server will be down for some minutes during this process.

To update the SSO server certificate:

- 1 From the **Administration** menu, select **Administrative Tools**.
- 2 Select **SSO Certificate Update** from the navigation pane.
- 3 For **Gatekeeper Certificate**, click **Browse...** to open the file upload dialog.

- 4 Select the gatekeeper certificate file in CER format and click **Open**.
- 5 For **STS Certificate**, click **Browse...** to open the file upload dialog.
- 6 Select the STS certificate file in PEM format and click **Open**.
- 7 For **Federation Server Certificate**, click **Browse...** to open the file upload dialog.
- 8 Select the federation server certificate file in CER format and click **Open**.
- 9 Click **Update SSO Certificates** to start the certificate update.

Tomcat will be restarted as part of this process, this will take several minutes.
- 10 Click **OK** to confirm the warning message.
- 11 Remain patient and wait until the **SSO Certificate Update** dialog reports completion of the update process.

Managing RM Services

The **Manage Services** function allows System Administrators to manage Dimensions RM related services, provided that Tomcat and Dimensions RM server are installed on the same machine.

To access System Administrator access.

To manage RM services, do the following:

- 1 From the **Administration** menu, select **Administrative Tools**, accessible from the RM Browser Administration drop-down for members of the System Administrator Group. See ["About Instance Administration" on page 506](#) for details concerning access.
- 2 Select **Manage Services** from the navigation pane.

RM Process Log

The **Process Log** shows the start time of Dimensions RM services, including the Open Text Common Tomcat, statistics, the current state for the RM Pool Manager and RM Webservice services.

To access the process log, do the following:

- 1 From the **Administration** menu, select **Administrative Tools**, accessible from the RM Browser Administration drop-down for members of the System Administrator Group. See ["About Instance Administration" on page 506](#) for details concerning access.
- 2 Select **Process Log** from the navigation pane.

The service statistics provides this data:

Number of application servers: The number RM Application server instances.

Number of WS workers: The number of workers processing RM Web service request.

Processed requests: The number of requests all instances handled.

Unprocessed requests: The number of requests that were not handled, because all processes were busy. Increasing the number of processes that can be run usually solves this issue.

Killed processes: The number of processes, Dimensions RM killed due lack of free memory. If this happens often, you should consider increasing RAM on your Dimensions RM server.

Crashed processes: The number of processes, that were terminated unexpectedly.

The **RM Pool Manager processes** table contains a list of all child process of RM Pool Manager (RM Application server and RM Webservice) and provides these data:

PIPE: The internal ID for inter process communication

PID: The process ID

Status: The current process status

Memory: The current amount of memory used.

Processed Requests: The number of requests the process handled.

Accessing Log Files

Accessing Dimensions RM Log Files

To access Dimensions RM log files, do the following:

- 1 From the **Administration** menu, select **Administrative Tools**.
- 2 In the left pane, select **Log Files**.
- 3 From the **Choose a log file...** box, select the desired log file.
- 4 To download the log file, click .

Downloading Dimensions RM and Tomcat Log Files

To download Dimensions RM and Tomcat log files, do the following:

- 1 From the **Administration** menu, select **Administrative Tools**.
- 2 In the left pane, select **Log Files**.
- 3 Click **Download all server log files**.

The log files will be provided for download or downloaded automatically (depending on your web browser) in a ZIP archive.

Accessing Administrative Audit

The Administrative Audit dialog provides Systems Administrators with a tool to list Administrative or AI related tasks performed during a selected time period; the default is the current date. Reports can be filtered by Action and/or User.

Included in the list of Actions are:

- Schema Definition: Any changes to class or relationship definition.
- Instance: Lists Instances Created.
- Permissions: List changes to user group, password, or permissions.
- Data Remove/Purge: Any use of the Remove or Purge Actions.
- Data Export: Any use of the Export Action.
- Data Import: Any use of the Import Action.
- Category: Lists creation or modification of categories.
- Form: Lists modification to the class forms.
- SSO/SQL: Tracks changes to SSO or SQL.
- AI: Lists AI related actions.

To execute the Dimensions RM Administrative Audit:

- 1** From the **Administration** menu, select **Administrative Tools**.
- 2** In the left pane, select **Administrative Audit**.
- 3** The report start and end dates will default to the current date.
Input a date to **Show Activity Since**, to change the start date.
Input a date to **Show Activity Till**, to change the end date.
- 4** Use the **All Actions** drop-down to limit the report to a single Action.
- 5** Use the **All Users** drop-down to limit the report to a single user.
- 6** Use the **Export** button to export the report.

Defining an RM Banner

System Administrators may use the Banner dialog to create important information and/or system alerts or to clearly distinguish between Test and Production instances. The banner many include formatted text and images.

Schema Related Naming Conventions

Instances - ["Naming Conventions for Instances" on page 610](#)

Classes - ["Naming Conventions for Classes" on page 610](#)

Attribute Display Names - ["Naming Conventions for Attribute Display Names" on page 611](#)

Attribute Names - ["Naming Conventions for Attribute Names" on page 611](#)

Relationships - ["Naming Conventions for Relationships" on page 611](#)

Workflow States - ["Naming Conventions for Workflow States" on page 612](#)

Workflow Transitions - ["Naming Conventions for Workflow Transitions" on page 612.](#)



NOTE

When defining objects that allow the use of characters outside the regular ASCII charset (e.g. German Umlauts, or Chinese or Japanese characters), up to 4 bytes will be required to store one character. As the supported databases use UTF-8 encoding, this means that the number of actual characters allowed depends on **which** characters are used.

Naming Conventions for Instances

For instance names, the following naming conventions apply:

Allowed characters:

Letters A-Z, a-z

Numbers

Underscore (_)

Hyphen (-)

Maximum length: Up to 30 characters

Instance name must not be one of the reserved words (see ["Dimensions RM Reserved Words" on page 612](#)).

Restrictions as specified for your database.

Naming Conventions for Classes

For class names, the following naming conventions apply:

Allowed characters:

Letters A-Z, a-z

Unicode characters

Numbers

Underscore (_)

Hyphen (-)

Ampersand (&)

Colon (:

Maximum length: Up to 1024 characters

Class name must not be one of the reserved words (see ["Dimensions RM Reserved Words" on page 612](#)).

Naming Conventions for Attribute Display Names

Allowed characters:

- Letters A-Z, a-z
- Unicode characters
- Numbers
- Underscore (_)
- Hyphen (-)
- Ampersand (&)
- Colon (:
- Space

Maximum length: Up to 1024 characters

Attribute display name must not be one of the reserved words (see ["Dimensions RM Reserved Words" on page 612](#)).

Naming Conventions for Attribute Names

Allowed characters:

- Letters A-Z, a-z
- Numbers
- Underscore (_)
- Hyphen (-)
- Ampersand (&)
- Colon (:

Maximum length: Up to 1024 characters

Attribute name must not start with **RTM_**.

Attribute name must not be one of the reserved words (see ["Dimensions RM Reserved Words" on page 612](#)).

Naming Conventions for Relationships

Allowed characters:

- Letters A-Z, a-z
- Unicode characters
- Numbers
- Underscore (_)
- Hyphen (-)
- Ampersand (&)
- Colon (:

Maximum length: Up to 1024 characters

Relationship name must not be one of the reserved words (see ["Dimensions RM Reserved Words" on page 612](#)).

Naming Conventions for Workflow States

Allowed characters: All ASCII characters and Unicode characters

Maximum length: Up to 1024 characters

Naming Conventions for Workflow Transitions

Allowed characters: All ASCII characters and Unicode characters

Maximum length: Up to 1024 characters

Dimensions RM Reserved Words

A

- ACCESS
- ADD
- ALL
- ALTER
- AND
- ANY
- AS
- ASC
- AUDIT
- AVER
- AVERAGE

B

- BETWEEN
- BY

C

- CALC
- CALCULATE
- CHAR
- CHECK

- CLAR_CONDITION
- CLASS_NAME
- CLUSTER
- COLUMN
- COMPRESS
- CONNECT
- COUNT
- CREATE
- CURRENT

D

- DATALESS_TAG_COLUMN
- DATE
- DATE_CREATED
- DATE_LAST_MODIFIED
- DBA
- DECIMAL
- DEFAULT
- DELETE
- DESC
- DISTINCT
- DROP
- DTP_TEXT

E

- ELSE
- EXCLUSIVE
- EXISTS
- EXPAND

F

- FILE
- FIRST
- FLOAT
- FOCUS
- FOR
- FOURTH

- FROM

G

- GEN_KEY_COLUMN
- GRANT
- GRAPHIC
- GROUP

H

- HAVING
- HAVING_CLARIFICATION_TEXT
- HAVING_NO_CLARIFICATION_TEXT
- HAVING_NO_QUERY_TEXT
- HAVING_QUERY_TEXT

I

- IDENTIFIED
- IF
- IMMEDIATE
- IMMEDIATE_XREF
- IN
- INCREMENT
- INDEX
- INITIAL
- INITIALIZED
- INSERT
- INTEGER
- INTERSECT
- INTO
- IS

K

- KEY
- KEYWORD_COLUMN
- KEY_LIST_CONDITION

L

- LEVEL

- LIKE
- LINKS_IN
- LOCK
- LONG
- LOWEST_LEVEL_REQUIREMENT_CONDITION

M

- MATH_OP
- MATH_TAG
- MAX
- MAXEXTENTS
- MAXIMISE
- MAXIMUM
- MIN
- MINIMISE
- MINIMUM
- MINUS
- MODE
- MODIFY

N

- NOAUDIT
- NOCOMPRESS
- NORM
- NORMALISE
- NORMALIZE
- NOT
- NOT_LOWEST_LEVEL_REQUIREMENT_CONDITION
- NOT_PRIMARY_IN
- NOT_PRIMARY_IN_CONDITION
- NOT_SECONDARY_IN
- NOT_SECONDARY_IN_CONDITION
- NOT_SOURCE_REQUIREMENT_CONDITION
- NOWAIT
- NULL
- NUMBER

O

- OF
- OFFLINE
- ON
- ONLINE
- OPTION
- OR
- ORDER
- ORDER_COLUMN

P

- PCTFREE
- POP
- POPULATED
- PRIMARY
- PRIMARY_HISTORY
- PRIMARY_IN
- PRIMARY_IN_CONDITION
- PRIMARY_IN_RELATIONSHIP
- PRIOR
- PRIVILEGES
- PUBLIC

Q

- QUERY_CONDITION

R

- RAW
- RELATIONSHIP_COLUMN
- RENAME
- REPLACE
- RESOURCE
- REVOKE
- ROW
- ROWID
- ROWNUM
- ROWS

S

- SECOND
- SECONDARY
- SECONDARY_HISTORY
- SECONDARY_IN
- SECONDARY_IN_CONDITION
- SECONDARY_IN_RELATIONSHIP
- SELECT
- SESSION
- SET
- SHARE
- SIZE
- SMALLINT
- SOURCE
- SOURCE_DOC
- SOURCE_DOC_TREE
- SOURCE_REQUIREMENT_CONDITION
- SOURCE_XREF
- START
- SUCCESSFUL
- SYNONYM
- SYSDATE

T

- TABLE
- THEN
- THIRD
- TO
- TOTAL
- TRIGGER
- TypeNameHere

U

- UID
- UNION
- UNIQUE

- UPDATE
- USER
- USING

V

- VALIDATE
- VALUES
- VARCHAR
- VARGRAPHIC
- VIEW

W

- WHENEVER
- WHERE
- WITH
- WITHOUT_CLAR_CONDITION
- WITHOUT_QUERY_CONDITION
- WITH_CLAR_CONDITION
- WITH_QUERY_CONDITION

X

- XRE

Chapter 13

Customizing and Scripting

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Dimensions RM Web Forms

In the 12.12 release of Dimensions RM, the web forms used to display Class information stored within RM were moved from storage in the Tomcat folder `...\webapps\rtmBrowser\forms` into the Dimensions RM database.

This change made secure forms management possible, as well as to allow the Instance Administrator to manage and modify the format and content of the forms without requiring System Administrator access to the file server.

The following sections describe:

- Using the Administration > Attribute Settings > Forms, ["Defining and Managing Web Forms in the UI" on page 620](#)
- Continued management of XML, ["Managing Web Forms and Templates in XML" on page 624](#).

Defining and Managing Web Forms in the UI

About the Default Forms

The default display for all classes defined in Dimensions RM is to display attributes by section (e.g., Standard, System, Link, Container, etc.) and to list all Custom attributes, those whose content is input and modified directly by users. The entries in the Custom section are listed in alphanumeric order. Until the Instance Administrator defines class forms, all new attributes are automatically included in the Custom section of the form..

Custom Attribute Exceptions:

- a Group Attributes** require special formatting and can be left to the be maintained in their special sections.
- b Standard Attributes** include Title and Description, with content controlled by the users, along with Requirement ID, Category and, if including branching, Product.

For those who have never created or modified a local form, you may choose to test this functionality using the example from ALM_Demo or from another of our Sample Instances (see ["Sample Instances" on page 24](#)).

Using the Web Form Editor is described in: ["Modifying a Web Form" on page 621](#).

Using forms management to Create a Form:

- 1** Select Attribute Settings from the Administration menu, choose the Forms tab.

The options available include the following:

- a New:** Create the basis for a new custom form for the selected class. This form will, initially, reflect the default form
- b Edit:** Open the selected form for modification.
- c Rename:** Assign a new name to the selected custom form.
- d Download:** Download a form to a local workspace for modification.
- e Upload:** Upload a locally modified file.
- f Copy:** Create a copy of the selected form.

- g Delete: Remove** the selected form.
- 2** From the drop-down, select a **Class**.
- 3** If the selected class already has a database form defined, it will be listed below the drop-down.

If the form is displayed with a star, it is the Active form, the form the instance is currently using when an object from the class is opened for viewing or modification

Business_Requirement



The Business_Requirement form is in use but may be highlighted and opened for editing.

If no form has been created for the selected class the form must be created, before it can be modified. In the following discussion, we will create a form for the Functional_Requirement class included in the ALM_Demo sample instance.

- 1** To create a form:
 - a** Select New from the Options available. The **Add Form** dialog is raised.
 - b** To base the initial form creation on the defaults, Check **Based on Default Form**, and click **OK**.

We recommend checking this box unless or until you are comfortable with Dimensions RM Forms creation. Choosing b will allow you to review the forms as they are. You may remove the sections you want to redesign, and add the attributes in the order that will make sense to the team.

- c** It is possible to create an new form completely based on self styled Sections in which case uncheck **Based on Default Form** and click OK.

Figure 13-1. Adding a New Form for Functional_Requirement

Modifying a Web Form

In the following discussion, we demonstrate creating a new Custom Section, and adding attributes to the section. We are using the Functional Requirement class in the sample instance: ALM_DEMO.

Most user defined attributes are included in the default Custom form, any new attributes defined will be included in Custom, and displayed in alphanumeric order. Before you can create your local sections of the forms, you must delete the existing Custom Section. We recommend reviewing the default Custom section, perhaps even take a screenshot for comparison, before you embark on the creation of a section grouped and formatted in a way that works best for the team

You might also create several new attributes to include in the 'New' custom section, or in a second section that will hold attributes specific to your project needs. For assistance in defining attributes, please see ["Attribute Definition" on page 533](#).

CUSTOM ATTRIBUTES

Approver: Joseph Wilson	Author:
Beta Test needed: Not Initialized	Dev Effort: 10
Function: Jutta Schöneberger	Label:
Planned for Release: Release 2.1.0	Priority: 3 - High
Spent Effort: 5	SW Component: SBM
Tag: Release Candidate	Test Effort: 2
Calculated Effort: 12	

Figure 13-2. ALM_Demo Functional Requirement Default Custom Section

To Create your own Custom section:

- 1 Select **Attribute Settings** from the **Administration** menu, choose the **Forms** tab.
- 2 From the drop-down, select the **Class** for which the form is to be modified.
We are modifying the form used for the **Functional_Requirement Class** in ALM_DEMO.
- 3 Highlight the class and click **Edit**.
The **Edit Form** dialog is raised.
- 4 Delete **Custom** in order to create a new User section in its place.
Highlight Custom and click on the trash icon to Delete it.
- 5 Select Add Section, name the section **ALM Custom** or a name of your choice.

Add Section

Section Name
ALM Custom

Section Type
User

OK Cancel

The new Section will be displayed on the left side of the form. Use the Up and Down arrows to relocate the section.



NOTE Field Menu

As you choose items from the Add Field menu, you will note that Title and Description are offered, although they are included as part of the default **Standard** section. ***An attribute cannot be included multiple times on a form.*** If you choose to include, for example, the Description attribute in the new user section you must remove the default Standard as well.

Choose some attributes, move them around, Save, Close and open a requirement to see how the new section looks.

- 6 Highlight the section and Select **the Add Field** menu.
 - a All available attributes will be listed for selection. Select from the List of Custom Attributes to initially populate the section, although any attributes may be selected.
 - b Drag and drop is recommended to arrange selected attributes.

- 7 Click **Save** and **Close**.
- 8 Open a requirement in using the modified setting. If using ALM_Demo Functional, it will display with the newly defined ALM Custom.

From the Form Editor you may:

Function	Description
Add Section	Add a new section to the form.
Add Group	Add a titled attribute sub-group within the Section.
Add Text	Add a text box, may be HTML enabled.
Add JavaScript	For details, please see "Managing Web Forms and Templates in XML" on page 624.
Add Field	Include additional Attributes
Number of Columns	Select the maximum number of columns to be included in the form. The display length of attributes included will control each line, however, you may drag things around until you have the most effective display.
Edit	Select and modify the title of the attribute displayed.

Managing Web Forms and Templates in XML

Veteran users of Dimensions RM have defined class templates, and stored those templates in the directory (<RM Install Dir>\Dimensions 25.2\Common Tools 2.4.0.0\tomcat\10.1\webapps\rtmBrowser\forms) contains the template files for all custom forms.

Each database and instance can have its own set of template files. A template file represents the custom layout for a single class type within the instance. The forms are stored in folders name for the database and the instance. For example, if the database name is **CDRM** and then Instance is **ALM_DEMO** the forms will be stored in: ...\\forms\CDRM\ALM_DEMO.

The templates are processed as follows:

- 1 The RM UI looks for a class-specific XML file, and loads the file if found.
- 2 If a class-specific XML file is not found, RM looks for the default file for the instance (forms\database\instance\default.xml), and loads it if it is found.
- 3 If an instance-specific XML file is not found, the global default file is loaded. This file creates a standard Dimensions RM appearance:

```
(<RM Install Dir>\Dimensions 25.2\Common Tools  
2.4.0.0\tomcat\10.1\webapps\rtmBrowser\forms\common\default.xml).
```

The default forms used by Test Management (Test_Run_Step.xml, Test_Step.xml) are also stored in the global default forms\common.

The naming of the database and instance directories must match their visible names. Template file names match the class name with a ".xml" extension.

Template Layout

This section describes the Template Layout in managed XML files.

The following illustration shows the layout of the global default file (the file that ships with Dimensions RM). This form applies to classes across instances.

```
<?xml version="1.0" encoding="UTF-8"?>  
<form xmlns="http://schemas.serena.com/2005/01/rtmform" animationspeed="1">  
  <section type="prioritized"/>  
  <section type="standard"/>  
  <section type="custom"/>  
  <section type="groupattribute"/>  
  <section type="system"/>  
  <section type="attachments"/>  
  <section type="comments"/>  
  <section type="links"/>  
  <section type="history"/>  
  <section type="polls"/>  
  <section type="dimensions"/>  
  <section type="container"/>  
  <section type="workflowhistory"/>  
  <section type="provide"/>  
</form>
```

The following illustration shows the layout of an example user-defined XML file that is specific to a single class name within an instance. The table that follows the illustration

describes the tags in the file. The table is ordered logically, rather than by the appearance of the tags in the XML file.

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <form xmlns="http://schemas.serena.com/2005/01/rtmform" animationspeed="5">
3   <script src="../jscript/myCustomScript.js"/>
4   <stylesheet src="../cssmyCustomStylesheet.css"/>
5   <section type="user" label="My First Section" cols="3" labelplacement="top">
6     <attribute id="ACTUAL_FIX_TIME"/>
7     <attribute id="DESCRIPTION" colspan="2"/>
8     <group label="Release Information" cols="2" labelplacement="left"
9       expandable="no">
        <attribute id="RELEASE_ID" label="Id"/>
        <attribute id="RELEASE_DATE" label="Date"/>
        <attribute id="RELEASE_STATUS" label="Status"/>
      </group>
      <text><![CDATA[<a href="http://www.serena.com"></a>]]></text>
    </section>
    <section type="user" label="My second Section" cols="2">
      <attribute id="RESPONSIBLE_ANALYST" type="Custom" label="Analyst"
        colspan="2">
        <writeable>
          <xhtml>
            <input name="myField" type="text" value="" size="30" maxlength="10"
              onchange="dosomethingspecial()" onfocus="dosomethingspecial()" />
            <button type="button" id="myButton"
              onclick="dosomethingspecial()">Search...</button>
          </xhtml>
        </writeable>
      </attribute>
    </section>
    <section type="prioritized"/>
    <!--
    <section type="standard" label="Standard Attributes"/>
    <section type="custom" label="Custom Attributes"/> -->
    <section type="groupattribute" label="Group Attributes"/>
    <section type="system" label="My System"/>
    <section type="attachments" label="File Attachments"/>
    <section type="comments" label="Discussions"/>
    <section type="links" label="Relationships"/>
    <section type="history" label="History"/>
    <section type="polls" label="Polls"/>
    <section type="dimensions" label="Dim CM Associations" />
    <section type="container"/>
  </form>

```

Tag	Description
1	Sections in forms are set by default to open and close by a scrolling mechanism. The <code>animationspeed</code> option determines one of the following: ■ The speed of the scrolling (default <code>animationspeed=0</code>) ■ Whether the scrolling mechanism is used. If it is not used (<code>animationspeed=0</code>), the sections open and close immediately when the user clicks + or -. For information about how to configure the <code>animationspeed</code> option, see "Configuring the Expansion and Collapse of RM Sections" on page 647.
2	The <code><script></code> tag contains a user-defined JavaScript file. You can include more than one JavaScript file. If a custom JavaScript file needs to perform processing after the form loads, unloads, gains focus, or loses focus, you can hook into the standard JavaScript <code>onload</code>, <code>onunload</code>, <code>onfocus</code>, and <code>onblur</code> events. These are dialog specific and occur after the form finishes its own processing of these events. The function names for each form follow: New Requirement, Edit Attributes, Change Request, Comments, Form View, Documents View: <code>objOnLoad</code>, <code>objOnUnload</code>, <code>objOnFocus</code>, <code>objOnBlur</code>, <code>objHistoryOnLoad</code> (NOTE: The Documents View form is displayed only after you click a requirement in the navigation tree.) Query by Class, Query by Relationship: <code>queryOnLoad</code>, <code>queryOnUnload</code>, <code>queryOnFocus</code>, <code>queryOnBlur</code> Edit Query: <code>editQueryOnLoad</code> (NOTE: This function is called after editing an existing query in the Query by Class or Query by Relationship dialogs after the field data has been entered.) Link Objects: <code>linkOnLoad</code>, <code>linkOnUnload</code>, <code>linkOnFocus</code>, <code>linkOnBlur</code> Organize by Collection: <code>collOnLoad</code>, <code>collOnUnload</code>, <code>collOnFocus</code>, <code>collOnBlur</code> Approve Change Request: <code>crOnLoad</code>, <code>crOnUnload</code>, <code>crOnFocus</code>, <code>crOnBlur</code> Organize by Category: <code>catOnLoad</code>, <code>catOnUnload</code>, <code>catOnFocus</code>, <code>catOnBlur</code> Add to Chapter: <code>atcOnLoad</code>, <code>atcOnUnload</code>, <code>atcOnFocus</code>, <code>atcOnBlur</code> There are other JavaScript functions that you can use with query-style forms and other forms that contain attributes. See "Query-Style Form Functions" on page 628 and "Helper Functions" on page 631 for details.

Tag	Description
	The <code>rtmObjCustomHtmlPrint(attrName)</code> function is called for any custom HTML attribute to get the read-only (print) value. The <code>attrName</code> parameter is the internal attribute name. The return value is a string that contains that value, which can be any HTML text or plain text that is used in the printed page to represent the value of that attribute. This function applies to the New Requirement and Edit Attributes dialog boxes only.
3	The <code><stylesheet></code> tag contains a user-defined stylesheet. You can include more than one stylesheet tag.
4	The <code><section></code> tag contains either a predefined section or a user-defined section. A predefined section contains a type, a label (defaults to the standard title for the section), the label placement (left or top; defaults to left), and the number of columns (defaults to two). A predefined section contains no other elements. Predefined section types include standard, custom, system, attachments, comments, links, history, polls, and dimensions. Predefined section types are used in the template (.xml) file. You can rearrange the placement of these sections. If a predefined type exists within the template file but would not normally be shown for an object, it is not displayed. If a predefined section does not exist within the template file, the section is not displayed. A user-defined section allows you to specify the order and grouping of attributes, and allows you to place custom fields on the form. A user-defined section contains a specific type (that is, "user"), a label, the label placement (left or top; defaults to left), and the number of columns (defaults to two). The label is the section label, but the label placement refers to attribute labels within that section.
5	The <code><attribute></code> tag can specify a standard attribute or a custom field that populates an attribute. The layout of the fields within a section or group is from left to right. You can specify a custom label or use the default label for the attribute from the database. You can also specify the placement of the label (left or top, defaults to whatever the group or section is set to). The label is the section label, but the label placement refers to attribute labels within that section. You can specify a custom attribute type. RM automatically generates a hidden attribute associated with a custom field by using the <code>attribute id</code> that is provided. You can specify how many columns the field consumes (defaults to one). See the description for tag 9 for options when you use XHTML/HTML inside an <code><attribute></code> tag.
6	The <code><group></code> tag allows you to physically group attributes, but in the confines of a section. A section could have several different groupings of attributes. The group specifies the attributes contained in it, a label, the label placement (left or top; defaults to left), the number of columns (defaults to two), and whether it is expandable or not (defaults to not expandable).
7	The CDATA element can be used in <code><text></code> and <code><attribute></code> tags. It is used to insert HTML that is not well formed into an XML file. Use CDATA if you do not know that the additional text is XHTML compliant.

Tag	Description
8	The <code><writeable></code> tag contained in the attribute definition indicates that if the form is displayed for editing, this is the XHTML/HTML that will be used. Alternatively, a <code><read-only></code> tag means that if the form is displayed as read-only, this is the XHTML/HTML that will be used. It is your responsibility to transfer data to a hidden field. You have three options when you use XHTML/HTML: • The custom XHTML/HTML can apply to both editable and read-only forms (if specified directly inside the <code><text></code> or <code><attribute></code> tag). • Different XHTML/HTML can be provided for editable as opposed to read-only forms (if specified in <code><writeable></code> and <code><read-only></code> elements inside the <code><text></code> or <code><attribute></code> tag). • The XHTML/HTML can only apply to editable forms (if specified in <code><writeable></code> only elements inside the <code><text></code> or <code><attribute></code> tag). With this option, read-only forms display the attribute in the standard way. The <code><writeable2></code> tag and <code><readonly2></code> tag are the same as the <code><writeable></code> tag and <code><readonly></code> tag, except that they are used whenever a range control is shown (any query-style dialog when between or not between is the selected operator). If these tags are not present, then the <code><writeable></code> tag and <code><readonly></code> tag are used for both controls. However, this is generally not recommended because it provides no way to specify a unique control ID and could cause the custom JavaScript to work in unexpected ways.
9	The <code><xhtml></code> tag can be used in <code><text></code> and <code><attribute></code> tags. It allows you to insert XHTML-compliant code that adds elements such as buttons to the form. You can also add text boxes inside <code><xhtml></code> tags with sizes set to any number of columns and rows, optionally with scrolling. For example, the following tag: <pre><xhtml> <TEXTAREA name="New_custom11" id="new_id11" rows="4" cols="25" wrap="off"> </TEXTAREA> </xhtml></pre> Adds a text box that allows four rows and 25 columns (in characters). The <code>wrap="off"</code> attribute enables scrollbars for this text box.

Query-Style Form Functions

The following functions can be used to customize the **Attribute Constraints** tab on query-style dialogs. They can be used to either change the form or the lists that appear when you hover over the down arrow button ▼ on either side of an attribute control. Query-style dialog boxes include:

- **Query by Class**
- **Query by Relationship**
- **Organize by Category**
- **Link**
- **Organize by Collection**

- **Add to Chapter**

The following functions can be used to customize query-style form lists that appear when you hover over the down arrow button ▼ on either side of an attribute control.

Function	Description
<code>rtmQueryOnOperatorSelection(attrId, operator)</code>	Called whenever an operator is selected in any query-style dialog. This function must return <code>true</code> if the selection is allowed or <code>false</code> if it is not allowed.
<code>rtmQueryOnValueOptionSelection(attrId, option)</code>	Called whenever a value option is selected in the list that opens to the right of the attribute control (Query by Class and Query by Relationship only). This function must return <code>true</code> if the selection is allowed or <code>false</code> if it is not allowed.
<code>rtmQueryAddCustomAttributeOperators(attrId)</code>	Called for any Web form custom attribute because the default operator list may or may not be appropriate. It should define the list in the same way as the <code>rtmQueryAdd...</code> functions, or may simply call one of them to get the same list. The <code>rtmQueryAdd...</code> functions are listed below: ■ <code>rtmQueryAddAlphaOperators</code> ■ <code>rtmQueryAddNumericOperators</code> ■ <code>rtmQueryAddDateOperators</code> ■ <code>rtmQueryAddListOperators</code> ■ <code>rtmQueryAddTextOperators</code> and are defined in <code>icObjectFormsMenus.js</code> (located in <i><RM Install Dir>\rtmBrowser\rm\common\js</i>). To customize the operator list, use the <code>rtmQueryAdd...</code> functions to build the list the way you want. Use the calls at the end of the functions to set the default operator. These calls include <code>rtmQueryLike</code> and <code>rtmQueryIn</code>.
<code>rtmQueryAddCustomAttributeOperators(attrName)</code>	Called for custom attributes when a query constraints dialog box that contains that attribute is opened.
<code>rtmQueryGetCustomValues(attrId, operator)</code>	Called whenever a query-style dialog is generating a script for each attribute. This function should generally not be necessary, but is provided in case the default processing is not sufficient. This function must return an array of values for any attributes using custom processing and <code>null</code> for any attributes using the default processing.

Function	Description
<code>rtmQuerySetCustomValues(attrId, values)</code>	Called to set in and not in custom attributes when loading an existing query for editing. This function is used in the case where a custom Web form hides an attribute that is part of an IN clause. When this occurs, Dimensions RM checks for the existence of the function and calls it so that the custom JavaScript can set the custom control to the correct value or values. This function returns true if the attribute was handled and false if it was not handled.
<code>rtmQueryShowValueOptions(attrId)</code>	Called to tell Dimensions RM to not show the list that opens to the right of the attribute control and contains the Fixed or Entered at runtime options.

Query-Style Form Function Parameters

The parameters for the ["Query-Style Form Functions" on page 628](#) are described in the following table.

Parameter	Description
<code>attrId</code>	The attribute name with the dialog name appended to it. This parameter is used to uniquely identify an attribute. For example, PUIDQryRS or PUIDQryRT for the PUID on the Constraints-Source or Constraints-Target tabs on the Query by Relationship form.
<code>operator</code>	A string with the internal operator (LIKE, IN, INITIALIZED, and so on) or pseudo-operator (BETWEEN and NOT BETWEEN).
<code>option</code>	FIXED (specified during the creation of the script) or RUNTIME (specified by the user in response to a prompt during the execution of the script).
<code>values</code>	The values in the IN list of the script.

Helper Functions

The following functions are helper functions for Web form custom attributes. They are used to get and set the attribute values that Dimensions RM uses.

Function	Description
<code>rtmUtilGetAttributeElementId(attrId, isRangeCtrl)</code>	Builds an ID string based on the attribute name and the context from which it is being called. This function is not validated.
<code>rtmUtilGetAttributeValue(attrId, isRangeCtrl)</code>	Gets the value of the specified attribute from the Web form. If the element (as determined by <code>rtmUtilGetAttributeElementId</code>) is an INPUT tag (whether it was defined in a custom or standard section), it returns its value. Otherwise, it returns the innerHTML value of the element. If the attribute is not found, the function returns null.
<code>rtmUtilSetAttributeValue(attrId, value, isRangeCtrl)</code>	Sets the value of the specified attribute.

Helper Function Parameters

The parameters for the ["Helper Functions" on page 631](#) are described in the following table.

Parameter	Description
<code>attrId</code>	The attribute name. This parameter is used to uniquely identify an attribute.
<code>value</code>	A string value to put into the Dimensions RM attribute in the Web form. This parameter does not work for non-Dimensions RM attributes.
<code>isRangeCtrl</code>	Valid values are true or false. This parameter is used with ranges (BETWEEN and NOT BETWEEN) that have two controls for a single attribute. The parameter would be true to show the second control.

Additional Detail for XML Customized Web Forms

The behavior of customized Web forms falls into two categories.

Editable Mode

Web Page	Behavior
New Requirement Edit Requirement Change Request Query by Class Query by Relationship Link Requirements Organize by Collection Organize by Category Add to Chapter	Each of these forms use the user-defined template for the object in "editable" mode with respect to customized attribute fields. For custom user fields, the "editable" XHTML/HTML that you provided is displayed. The header and footer sections of these forms are not customizable.

Read-Only Mode

Web Page	Behavior
Comments Form View Approve Change Request Documents View Traceability View	Each of these forms use the user-defined template for the object in "read-only" mode with respect to customized attribute fields. They display the layout without any user-editable fields. For custom user fields, they display either the "read-only" XHTML/HTML that you provided, or if none, the value of the specified field. If there is no <writeable> or <read-only> tag, the same XHTML/HTML is displayed in both editable and read-only forms. The header and footer sections of these forms are not customizable. NOTE: The Documents View and Traceability View forms are displayed only after you click a requirement in the navigation tree or traceability tree.

Allowable Tags

The following listing shows the allowable tags that you can use when customizing Web forms.

<script>:

src - URL to JavaScript file

<stylesheet>:

src - URL to Cascading Style Sheet (CSS) file

<section>:

labelplacement - left or top (whether label is placed beside or above attribute value)

cols - number of attribute columns within the section

header - yes or no (whether to show the expandable section header or not)

justified - left or right (how to justify an attribute within the attribute column)

section type - prioritized, standard, custom, groupattribute, system, attachments, comments, links, history, polls, dimensions, container, workflowhistory, provide

user section tags:

<attribute>:

id - attribute name (not display name)

colspan - number of attribute columns occupied by this attribute

type - field or custom (field shows the attribute in the standard way)

custom attribute tags:

<readonly> - how the custom attribute gets displayed in read-only forms (for example, plain text)

<xhtml> - for well-formed HTML

<![CDATA[]]> - for standard HTML (not well-formed HTML)

<writeable> - how the custom attribute gets displayed in editable requirement forms

<xhtml> - for well-formed HTML

<![CDATA[]]> - for standard HTML (not well-formed HTML)

NOTE: If neither custom attribute tag is used, the contents apply to both editable and read-only forms.

<group> (a subgroup within a section):

cols - number of attribute columns within a section

expandable - yes or no (whether the group can be expanded and collapsed or displayed in a fieldset)

tags: <attribute> and <text>, just like in <section>

<text>:

colspan - number of attribute columns occupied by this attribute

type - if set to "url", generates and displays the URL to the requirement. For example, <text label="Requirement Link" type="url"/>

tags: <xhtml> and <![CDATA[]]>, just like in <attribute>

Defining Custom Styles for Exported Documents

The basic reason you define custom styles is to change the style of chapter and requirement headings. However, you can customize any styles that are used in a document unless they are used as in-line styles. (Some of the styles introduced when you edit a requirement using the HTML editor are in-line styles and cannot be changed.)



IMPORTANT!

Using custom styles is only supported if the chapter is formatted as **Paragraph**. To ensure that all chapters formatted as **Paragraph** follow these steps:

- 1 Open the document in Document View.
- 2 Click on **Format Document** in the **Documents** group in the **Action** pane.
- 3 **Requirement Layout**: Select **Paragraph**.
- 4 Click the **Reset all chapters** button.
- 5 Click the **OK** button.

To define custom styles:

- 1 Create or open a Microsoft Word document that contains the template format.
- 2 Save the Word document as filtered HTML document.



IMPORTANT!

In MS Word you must set the file **Save as type** to:
Web Page, Filtered (*.htm;*.html).

Do **NOT** select "Single File Web Page (*.mht;*.mhtml)" or "Web Page (*.htm;*.html)".

- 3 If it does not exist, create a directory using the *DataBase_Name* (e.g., RM) in directory:

```
<RM Install Dir>\Dimensions 25.2\Common Tools  
2.4.0.0\tomcat\10.1\webapps\rtmBrowser\conf
```
- 4 Create the directory *Instance_Name* inside the *DataBase_Name* directory from [Step 3](#).
- 5 In a text editor, create a file named **DocumentPublishTemplate.txt**.
- 6 To use this template for all document exports, place the **DocumentPublishTemplate.txt** into the *Instance_Name* directory created in [Step 4](#).

Otherwise, to provide separate templates for exporting documents, create a directory named 'publish templates' in the *Instance_Name* directory and in the 'publish templates' directory create a directory with a template name.

- a All export processes:** Place the DocumentPublishTemplate.txt file into the following directory:
- ```
<RM Install Dir>\Dimensions 25.2\Common Tools
2.4.0.0\tomcat\10.1\webapps\rtmBrowser\conf\
Database_Name\Instance_Name
```
- b With a individual publish templates:** Create the marked directories in path <RM Install Dir>\Dimensions 25.2\Common Tools 2.4.0.0\tomcat\10.1\webapps\rtmBrowser\conf\ Database\_Name\Instance\_Name\publish templates\TemplateName and place DocumentPublishTemplate.txt into the TemplateName directory.



#### NOTE A Single Export Template

Using DocumentPublishTemplate.txt with a specific publish template overrides the DocumentPublishTemplate.txt file for all export processes.

- 7 Open the HTML file you created in step 2 in text editor (e.g. Notepad).
- 8 The HTML file might contain more than one style section. Some of these style sections might be surrounded by an HTML comment (<!-- and -->). You need to copy all styles and include their <style> and </style> tags as well as the HTML comments if applicable and paste them into the DocumentPublishTemplate.txt file.



#### NOTE Style Tags

- Include the <style> and </style> tags in the text that you copy. A style section might look like this:

```
<style>
<!--
/* Font Definitions */
@font-face
{font-family:"Cambria Math";
panose-1:2 4 5 3 5 4 6 3 2 4;
mso-font-charset:1;
mso-generic-font-family:roman;
mso-font-format:other;
mso-font-pitch:variable;
mso-font-signature:0 0 0 0 0 0;}
...
</style>
```

If a style is surrounded by an HTML comment (<!-- and -->), the comment tags must be copied as well. A commented style definition might look like this:

```
<!--[if gte mso 10]>
<style>
/* Style Definitions */
...
</style><![endif]>
```

- 9 Find the text WordSection1 and replace it with **Section1**. You should be offered these texts:  
@page WordSection1

```
div.WordSection1
{page:WordSection1;}
```

**10** Save the file `DocumentPublishTemplate.txt`.

## Creating Templates to Export Requirements

There can be many templates for each instance. Each template is contained in the Publish Templates directory. This directory contains files that provide formatting for requirements from any class that you want to customize. This directory can also contain style, header and footer files.



### **IMPORTANT!** Paragraph Formatting

Using templates is only supported if the chapter is formatted as **Paragraph**. To ensure that all chapters have been formatted as **Paragraph** follow these steps:

- 1** Open the document in Document View.
- 2** Click on **Format Document** in the **Documents** group in the **Action** pane.
- 3 Requirement Layout:** Select **Paragraph**.
- 4** Click the **Reset all chapters** button.
- 5** Click the **OK** button.

Users can select the template to be used for each document using the **Format Document** dialog box in Documents View.



### **NOTE** Paragraph Format

You must select **Paragraph** in the **Requirement Format** section of the **Format Document** dialog box, not **Grid**.

### **To create a new requirement template:**

- 1** Create or open a Microsoft Word document that contains the template format.
- 2** Add attribute names (not attribute display names) as placeholders for the content of an attribute.

The following illustration shows an example of a portion of such a Word document.

|                  |            |                        |                  |
|------------------|------------|------------------------|------------------|
| <b>Priority:</b> | <PRIORITY> | <b>Delivery Phase:</b> | <DELIVERY_PHASE> |
| <TITLE>          |            |                        |                  |
| <TEXT>           |            |                        |                  |



**NOTE Paragraph Format**

If using a paragraph instead of a table, you might want to use numbering like with chapters. In this case, use the **<#HEADING\_NUMBER#>** placeholder before the title, e.g. **<#HEADING\_NUMBER#> <TITLE>**.

**NOTES**

Attribute Name Format **<ATTRIBUTE>**

When applying formatting to attribute names, **<ATTRIBUTE>**, you **MUST** select the full attribute name **including** the angle brackets, **< >**. Otherwise the text will be exported rather than the value of the attribute.

The file name must match the name of the class.

The template files are applied by Class, the saved file name must match the name of the Class.

You must set the file **Save as type** in Word to: **Web Page (\*.htm;\*.html)**.

Do **NOT** select "Single File Web Page (\*.mht;\*.mhtml)" or "Web Page, Filtered (\*.htm;\*.html)".

- 3** Save the Word document in HTML format. The file name must match the name of the class.
- 4** Use Windows Explorer to manually change the file extension to:  
.txt.
- 5** Open the text file with a text editor (e.g. Notepad).
- 6** Find the text *WordSection1* and replace it with **Section1**. You should be offered these texts:  
@page WordSection1  
div.WordSection1  
{page:WordSection1;}
- 7** Find all directory references of *WordFileName\_files* and rename *WordFileName\_files* to **PublishDoc\_files**.
- 8** If it does not exist, create the directory *DataBase\_Name* in this directory  
*RM\_Install\Common Tools #.#\tomcat\#.#\webapps\rtmBrowser\conf*
- 9** If it does not exist, create the directory *Instance\_Name* inside the *DataBase\_Name* directory from [Step 8](#).
- 10** If it does not exist, create the directory *publish templates* inside the *Instance\_Name* directory from [Step 9](#).
- 11** Copy the .txt file and the *WordFileName\_files* directory to the following location:  
*RM\_Install\Common Tools #.#\tomcat\#.#\webapps\rtmBrowser\conf*  
*\DataBase\_Name\Instance\_Name\publish templates\Templatedirectory*  
*\ClassName.txt*

Where *TemplateDirectory* is the name you want displayed in the **Publish Requirement Template** list on the Format Document dialog.

- 12** The template is now available for users to select. Repeat this procedure for each class for which you want a custom template.



**NOTE** If there are files in the following directory:

```
RM_Install\Common Tools
#. #\tomcat\#. #\webapps\rtmBrowser\conf
\DataBase_Name\Instance_Name\publish templates\Template
Directory
```

They are used and are available from the **Format Document** dialog box from the **Documents View Actions pane**. If this directory is empty, the style and header files defined for each instance (if any) in the following directory are used:

```
RM_Install\Common Tools
#. #\tomcat\#. #\webapps\rtmBrowser\conf
\DataBase_Name\Instance_Name
```

For information about creating the style and header files in the latter case, see ["Defining Custom Styles for Exported Documents" on page 634](#) and ["Defining Headers and Footers for Exported Documents" on page 638](#).

## Defining Headers and Footers for Exported Documents

By default, no header and footer information is exported from Document View. This is the case even if the document you imported using RM Import has a header and footer.

You can define header and footer information to be included in such documents.



**IMPORTANT!** Paragraph Formatting

Using templates is only supported if the chapter is formatted as **Paragraph**. To ensure that all chapters have been formatted as **Paragraph** follow these steps:

- 1** Open the document in Document View.
- 2** Click on **Format Document** in the **Documents** group in the **Action** pane.
- 3 Requirement Layout:** Select **Paragraph**.
- 4** Click the **Reset all chapters** button.
- 5** Click the **OK** button.

The following describe the available functions:

["Creating a General Header and Footer File" on page 639](#)

["Creating a Template Header and Footer File" on page 640](#)

## Creating a General Header and Footer File

A general header and footer file is used for all exported documents, unless a specific template overrides the default. For creating a template header and footer file see chapter ["Creating a Template Header and Footer File" on page 640](#).

### To create a new header and footer file:

- 1 Create or open a Microsoft Word document that contains the header or footer. Save the Word document in HTML format.



#### NOTE

##### Save as type

You must set the file **Save as type** in Word to: **Web Page (\*.htm;\*.html)**. Do **NOT** select "Single File Web Page (\*.mht;\*.mhtml)" or "Web Page, Filtered (\*.htm;\*.html)".

- 2 If it does not exist, create the directory *DataBase\_Name* in this directory  
`RM_Install\Common Tools \#.#\tomcat\#\#\webapps\rtmBrowser\conf`



#### NOTE

##### Database Name:

The *DataBase\_Name* is identical with the database name from the login dialog.

- 3 If it does not exist, create the directory *Instance\_Name* inside the *DataBase\_Name* directory from [Step 2](#).



#### NOTE

##### Instance Name:

The *Instance\_Name* is identical with the Instance name from the login dialog.

- 4 If it does not exist, create the directory `publish_templates` inside the *Instance\_Name* directory from [Step 3](#).
- 5 The save causes Word to create a subdirectory: *WordFileName\_files*. Copy the file **header.htm** from that directory to:  
`RM_Install\Common Tools \#.#\tomcat\#\#\webapps\rtmBrowser\conf\`  
`\Database_Name\Instance_Name`

## Creating a Template Header and Footer File

A template header and footer file resides in the same directory as the class template(s) created in chapter "Creating Templates to Export Requirements" on page 636 or alone. If you created a class template, you can start with step [Step 5](#).

**To create a new header and footer file:**

- 1 If it does not exist, create the directory *DataBase\_Name* in this directory  
`RM_Install\Common Tools \#.#\atomcat\#.#\webapps\rtmBrowser\conf`



### NOTE Database Name

The *DataBase\_Name* is identical with the database name from the login dialog.

- 2 If it does not exist, create the directory *Instance\_Name* inside the *DataBase\_Name* directory from [Step 1](#).



### NOTE Instance Name

The *Instance\_Name* is identical with the Instance name from the login dialog.

- 3 If it does not exist, create the directory `publish templates` inside the *Instance\_Name* directory from [Step 2](#).
- 4 Create the directory *TemplateDirectory* inside the `publish templates` directory from [Step 3](#). *TemplateDirectory* is the name you want displayed in the **Publish Requirement Template** list on the Format Document dialog.
- 5 Create or open a Microsoft Word document that contains the header or footer. Save the Word document in HTML format.



### NOTE Save as type

You must set the file **Save as type** in Word to: **Web Page (\*.htm;\*.html)**.

Do **NOT** select "Single File Web Page (\*.mht;\*.mhtml)" or "Web Page, Filtered (\*.htm;\*.html)".

- 6 In the same directory your HTML file is in, Word created a directory *WordFileName\_files*. Copy the file `header.htm` from that directory to:  
`RM_Install\Common Tools \#.#\atomcat\#.#\webapps\rtmBrowser\conf`  
`\DataBase_Name\Instance_Name\publish templates\TemplateDirectory`

## Exporting a Document with File Attachments from a Separate Server

To be able to export documents with file attachments, Microsoft Word must be installed on the server. We understand that this is not possible for some customers. To resolve this

issue, a separate machine with Word installed on it can be used to redirect the exporting of a document. This machine also must have Dimensions RM installed on it and is referred to as a "publishing server." The publishing server must first be configured.



**NOTE** Dimensions RM Version

Both servers must have the same version of Dimensions RM installed on them, and both servers must point to the same Oracle instance.

**To configure the publishing server:**

Create a text file named `rm.cfg` in the following directory:

`RM_Install\Common Tools \#.#\tomcat\#.#\webapps\rtmBrowser\conf`

The format of the `rm.cfg` file follows:

```
[Document]
PublishServerURL=URL_of_publish_server
Database=Database_name
```

For example: `PublishServerURL=http://server/rtmBrowser`

If any specified information cannot be found, the current server or current database is used.

## Customizing RM Interface Menus and Title Bars

HTML and JavaScript can be used to customize the menus and the Actions pane. The following items can be changed:

- Menu text
- Tool tips
- Images
- Sequence
- Number of columns
- Title of the view in the title bar

You can also add extra menu items. The extra menu items can point to any HTTP address (for example, `http://www.opentext.com`) or execute JavaScript functions.

### **Editing the Top Menu**

The menus are defined in the file `RM_Install\Common Tools \#.#\tomcat\#.#\webapps\rtmBrowser\rm\frame\panels\top\toppanel.jsp`. You can define either buttons or menus. To edit `toppanel.jsp`, open it in a text editor, e.g. Notepad++.

**Caution:** After changing the `toppanel.jsp` file, you must restart the **Dimensions RM Common Tomcat** service.

### Defining a Button

A button is defined by an `sct:largeButtonItem` tag

The `sct:largeButtonItem` tag must follow this format:

```
<sct:largeButtonItem href="javascript:customFunction()">Any HTML code</sct:largeButtonItem>
```

#### Examples:

##### Simple Button:

```
<sct:largeButtonItem href="javascript:customFunction()">
 Custom Button
</sct:largeButtonItem>
```

##### Button with Tool Tip:

```
<sct:largeButtonItem href="javascript:customFunction()" title="This is
a custom button.">
 Custom Button
</sct:largeButtonItem>
```

##### Button with Picture:

```
<sct:largeButtonItem href="javascript:customFunction()">

 Custom Button
</sct:largeButtonItem>
```

### Defining a Menu

A menu is defined by a `largeButtonItem` tag and contains one or several `subMenuItem` tags which define the menu entries.

The `sct:largeButtonItem` *should* follow this format:

```
<sct:largeButtonItem>HTML code and sct:subMenuItem tags</sct:largeButtonItem>
```

Note that also for menus, you can define a tool tip by adding the `title` attribute to the `largeButtonItem`.

Each `subMenuItem` tag **must** follow this format:

```
<sct:subMenuItem href="javascript:customFunction()">Any HTML code</sct:subMenuItem>
```

#### On the `subMenuItem` tag, there are these restrictions:

**Caution:** You **must** follow the `subMenuItem` format as described above, otherwise users will not be able to log into Dimensions RM.

- There must be a `href` attribute.
- The `href` attribute must call a JavaScript function, e.g. `javascript:aFunction()`.
- The JavaScript function call in the `href` attribute **must** start with **javascript:**.
- No other attributes are allowed.

Simple Menu:

```

<sct:largeButtonItem>
 Custom Menu
 <sct:subMenu>
 <sct:subMenuItem href="javascript:customFunction()">Custom Entry
 </sct:subMenuItem>
 <sct:subMenuItem href="javascript:window.open('https://
www.opentext.com')">Open Text Homepage
 </sct:subMenuItem>
 </sct:subMenu>
</sct:largeButtonItem>

```

Menu with Tool Tips:

```

<sct:largeButtonItem>
 Custom Menu
 <sct:subMenu>
 <sct:subMenuItem href="javascript:customFunction()">
 Custom Entry
 </sct:subMenuItem>
 <sct:subMenuItem href="javascript:window.open('https://
www.opentext.com')">
 Open Text Homepage</
span>
 </sct:subMenuItem>
 </sct:subMenu>
</sct:largeButtonItem>

```

Menu with Picture:

```

<sct:largeButtonItem>

 Custom Menu
 <sct:subMenu>
 <sct:subMenuItem href="javascript:customFunction()">Custom Entry
 </sct:subMenuItem>
 <sct:subMenuItem href="javascript:window.open('https://www.Open
Text.com')">Open Text Homepage
 </sct:subMenuItem>
 </sct:subMenu>
</sct:largeButtonItem>

```

**NOTE Restarting Tomcat Server**

After changing the `toppanel.jsp` file, you must restart the **Dimensions RM Common Tomcat** service.

## Editing the Action Pane of a View

The Action pane is defined by JSP files which are located in subdirectories of this path:

*RM\_Install*\Common Tools #.#\tomcat\#.#\webapps\rtmBrowser\rm

The following sections describe how to modify the Action pane of the views:

### Editing the Action Pane of Home View

### Editing the Action Pane of other Views

Since all JSP files are text files, they must be edited using a text editor, e.g. Notepad.

#### **Editing the Action Pane of Home View**

Open navigation\index.jsp in a text editor, e.g. Notepad. The index.jsp file contains HTML and JSP tags.

#### **A group uses the following HTML tags:**

**DIV:** This tag defines the group.

**H2 and SPAN:** These tags define the headline.

**UL:** This tag defines a list of sub-items.

**LI:** This tag defines a single sub-item.

**DIV:** This tag defines a separator (horizontal line).

#### **Example:**

```
<c:set var="apGroupId" value="myCustomGroup"/>
<c:choose>
 <c:when test="${actionPanelCollapseState[apGroupId] eq 'collapsed'}">
 <c:set var="css" value="collapsed"/>
 </c:when>
 <c:otherwise>
 <c:set var="css" value=""/>
 </c:otherwise>
</c:choose>
<div id="myCustomGroup" class='actionGroup ${css}'>
 <h2>My Custom Group</h2>

 <li id="btnCustom1" onclick="customFunction1()">Custom Entry 1
 <div class="actionSeparator"></div>
 <li id="btnCustom2" onclick="customFunction2()" title="My Custom
Entry">Custom Entry 2

</div>
```

The above example shows a group with 2 entries. Entry 2 makes use of the `title` attribute to show a tool tip. Both entries are separated by a horizontal line. When using this example in your own `index.jsp` file, you need to do the following:

**Change** `myCustomGroup` to a unique ID. Note that the `id` is used on `c:set` and `div`.

**Change** `My Custom Group` to a group title of your liking.

Change the **bold** HTML code to match your entries.



#### **NOTE Restarting Tomcat Server**

After changing the `index.jsp` file, you must restart the **Dimensions RM Common Tomcat** service.



### Editing the Action Pane of other Views

The following table shows the file name for each view.

| View         | File                         |
|--------------|------------------------------|
| Document     | documents\pagesupport.jsp    |
| My Work      | mywork\pagesupport.jsp       |
| Requirements | requirements\pagesupport.jsp |
| Traceability | traceability\pagesupport.jsp |

In `pagesupport.jsp` files, the groups are built by JavaScript. In your text editor, navigate to the line which contains `groups : [`. Then find the location where you want to insert your custom group.

#### A group uses the following elements:

**title:** The headline of the group.

**id:** The identifier of the group.

**collapsed:** References a variable which stores the collapsed/expanded state for the group.

**actions:** An array of entries within a group.

#### An action uses the following elements:

**id:** The identifier of the group.

**action:** A JavaScript function which is executed when clicking the entry.

**message:** The HTML code which is used to display the entry in the group.

#### Example:

```
{
 title : "My Custom Group",
 id : "myCustomGroup",
 collapsed : "${actionPanelCollapseState['myCustomGroup']}",
 actions : [
 { id : "newRTMDocumentMenu",
 action : "customFunction1()",
 message : "Custom Entry 1"
 },
 {},
 { id : "newRTMDocumentMenu",
 action : "customFunction2()",
 message : "Custom Entry 2"
 }
]
}
```

The above example shows a group with 2 entries. Entry 2 contains a **span** element with a **title** attribute to show a tool tip. Both entries are separated by a horizontal line, which is created by using `{}`. When using this example in your own `pagesupport.jsp` file, you need to do the following:

Change `myCustomGroup` to a unique ID. Note that the id is used on `id` and collapsed.

Change `My Custom Group` to a group title of your liking.

Change the **bold** JavaScript code to match your entries.

**Caution: Groups and actions are arrays:**

They are separated with commas, however the last group and the last action in a group **must not** have a comma after the closing curly brace `}`.

If there are commas missing or additional commas exist in your JavaScript code, an error might occur when loading the view. Due to this error, the view may be incomplete or blank.



**NOTE Restarting Tomcat Server**

After changing the `pagesupport.jsp` file, you must restart the **Dimensions RM Common Tomcat** service.

## Changing the Default Settings of the Text Editor

The "off-the-shelf" default font size of the text editor used in the UI is 10 points. An RM-specific setting in the `tinymce_custom.css` file changes this value to 12 points. The `tinymce_custom.css` file is located in the following directory:

```
<RM_Install\Common Tools \#.#\tomcat\#.#\webapps\rtmBrowser\css\tiny_mce
```



**NOTE Restarting Tomcat Server**

This setting applies to all instances hosted on the server.

For more information about using and customizing the text editor for RM, please refer to the information about TinyMCE found on the Moxiecode Systems AB Web site.

## Customizing the Editable Grid

You can customize the look and behavior of the Editable Grid by using JavaScript. This is done by adding JavaScript to the following file on the RM Server:

`Install_Dir\RM\rtmBrowser\rm\ext\Extensions.js`

Initially, the `Extensions.js` file is empty. To add a customization, copy the appropriate JavaScript from the example file, paste it into `Extensions.js`, and then edit it to meet your specific needs. The example file is:

`Install_Dir\RM\rtmBrowser\rm\ext\Extensions_example.js`

Using JavaScript, you can achieve the following customizations of the Editable Grid:

**Remove the Add New Record** button from the Editable Grid toolbar.

**Hide specific columns** of the Editable Grid.

**Set specific columns** to be Read-Only.

**Set specific cells** to be Read-Only/Writable or Mandatory/Optional based upon the value of other cells in the row.

**Limit the items displayed** in a Pick List based upon the current value.

**Add buttons that can call other functions**, or external links, to populate a cell with data.

See the `Extensions_example.js` file for commented JavaScript examples of Editable Grid customizations.

## Configuring the Expansion and Collapse of RM Sections

You can control whether sections on RM UI Web pages use a scrolling mechanism to open and close or whether the sections open and close immediately when users click **+** or **-**. If you want the sections to scroll, you can specify the speed of the scrolling.

You configure this functionality using the `animationspeed` option in the `default.xml` file, which is located in the following location:

`RM_Install\Common Tools \#.#\tomcat\#.#\webapps\rtmBrowser\forms\common`

You can also configure this functionality in custom Web forms.

By default, the scrolling speed is set to 0, and is set on the root form element in the `default.xml` file. When the `animationspeed` option is set on the root form element, it affects all sections. For an example of the option set on the root form element, see item 1 in the illustration under ["Template Layout" on page 624](#).

To set different scrolling speeds for sections, set the `animationspeed` option on the individual section. For example:

```
<section type="standard" label="Standard Attributes" animationspeed="0" />
```

To set no scrolling, set the `animationspeed` option to 0.

## Creating Custom Login Alert Pages for RM



**NOTE** Defining and Maintaining Banners from the UI

As of release Dimensions RM 25.4 (13.1) it is possible for the System Administrator to create banners from the UI. See ["Defining an RM Banner" on page 609](#).

***The following is still supported, but the new feature is recommended.*** See ["Defining an RM Banner" on page 609](#).

System Administrators can optionally require users to review and accept an alert page before proceeding to the open UI. When this is done, users are presented with the alert page after entering their login credentials. Once they accept the alert, the client opens normally.

This is a useful way to communicate important new information to users before they complete the login.

### **To configure a custom login alert page for RM:**

- 1 Create either or both of the following files on the RM server:

IN directory *RM\_Install*\Common Tools  
#. #\tomcat\#. #\webapps\rtmBrowser

For most standard browsers, name the file: warning.html

If your users use Firefox create: warning.txt

- 2 Add the Alert text to these files.

If you used Microsoft Word to edit the HTML file save the file as a

Web Page, Filtered

to ensure that any Microsoft Office tags are removed. A true HTML editor is recommended.

## Customizing Headers and Footers in RM

Dimensions RM Headers and Footers to allow organizations to include the company name, a corporate logo, or a security banner to differentiate between test and production databases.

### **To customize headers and footers on the RM UI:**

- 1 Make a backup copy of the web.xml file. It is on the server in location:  
<RM Install Dir>\Dimensions 25.2\Common Tools 2.4.0.0\tomcat\10.1\webapps\rtmBrowser\WEB-INF
- 2 Open the web.xml file in a text editor.

- 3 Locate the last "bean id" in the file. It begins :

```
<bean id="rmHeaderAndFooterText"
```

- 4 Beneath this entry, there are two property tags:

```
<property name="header">
```

```
<property name="footer">
```

Uncomment the property section you want to enable. To do this, remove the opening (<!--) and closing (-->) comment tags from around that property section.

- 5 In the relevant <property name="URL"> statement, replace the placeholder *enter your link to custom header (or footer) here...* with the path to your header or footer file. This html file may be placed in the rtmBrowser folder.

For example:

If you have named your file `securityheader.html` and placed it in the folder:  
`RM_Install\Common Tools \#.\tomcat\#.\webapps\rtmBrowser`

Then, the URL property value would be:

```
<property name="URL"><value>/rtmBrowser/html/securityheader.html</value></property>
```

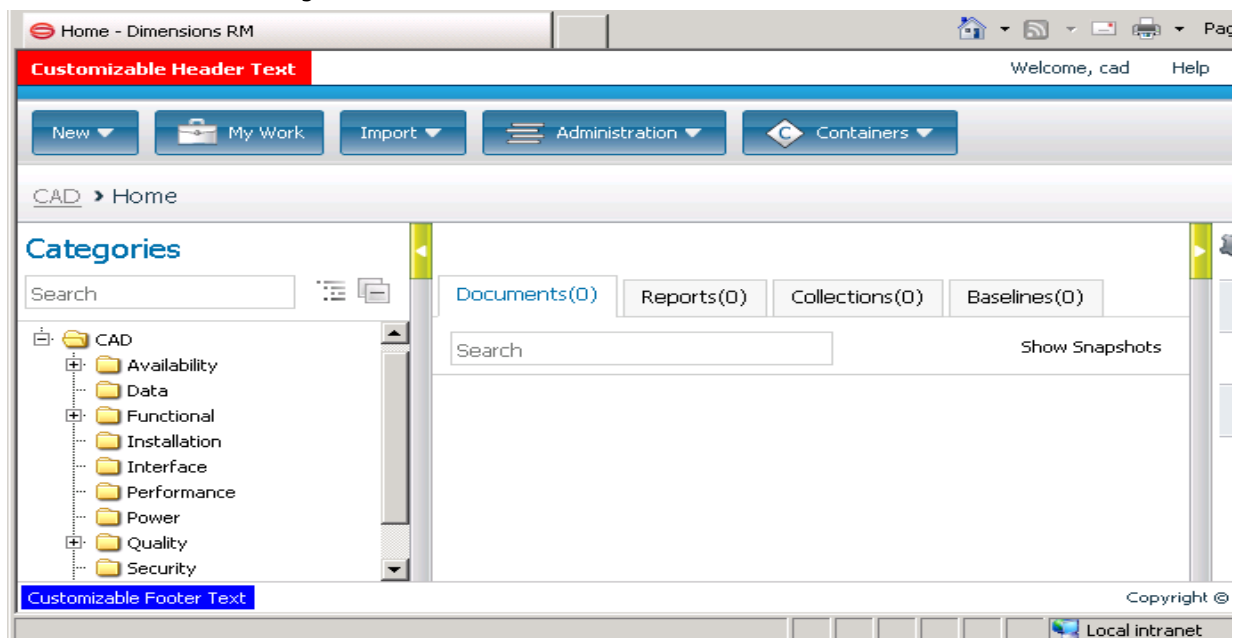


#### **IMPORTANT!** Quotation Marks

Do not include quotation marks (") in the URL value.

- 6 Optionally, in the relevant <property name="height"> statement, you can change the value (default: 20) with the desired height.
- 7 Save the file and restart the Dimensions RM Tomcat service (Dimensions RM Common Tomcat).

The following screen shot shows the location of the custom header and footer.



# Dashboard Export

Dashboards can be exported into PowerPoint presentations and PDF files. To allow this, a supported version of Microsoft® PowerPoint must be installed on the Dimensions RM server.

The Configuration of the Export Dashboard must be completed by a System Administrator, as it requires access to the RM Installation folder.

The following sections describe additional the details for exporting Dashboards:

[Using a Template for Dashboard Export](#)

[Configuring the Dashboard Export](#)

[Dashboard Export Using the Command Line](#)

## **Using a Template for Dashboard Export**

For creating the presentation, a template can be used. If you wish to use a template, it must be located in the <RM\_Install>\RM\bin\ directory and have the name DashboardExport.pptx.

### **A Sample has been included:**

We have included a sample template, with a **Title Slide**, an image, and a "Thank you". See: <RM\_Install>\RM\bin\DashboardExport.pptx

When defining your own template, Dashboard Export will use the number of slides provided:

**One Slide:** Will be identified as the image slide.

**Two Slides:** The first slide will be assigned as the title slide; the second slide as the image slides.

**More than two:** All subsequent slides will be ignored for processing, but remain in the final presentation.

The title box of the title or image slide supports the following placeholders:

| Placeholder | Description                                                                                                                                     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| %NAME%      | On the title slide, this placeholder is replaced by the dashboard name.<br>On the image slide, this placeholder is replaced by the widget name. |
| %DATE%      | On title or image slide, this placeholder is replaced by the current date with the format configured in the DashboardExport.exe.config file.    |

## **Configuring the Dashboard Export**

Dashboard export is configured by editing the DashboardExport.exe.config file, which is located in the <RM\_Install>\RM\bin\ directory.

The DashboardExport.exe.config file allows you to configure the following settings:

- **ImagePosition:** Defines the position of the image on the image. For the position, the horizontal (x) and vertical (y) value have to be specified in this format: **x, y**  
The default **0, 130** means that the image will start at the leftmost position and 130 pixels from the top. Note that the x-position is ignored if the **CenterHorizontally** option is enabled.

- **AlwaysScaleImage:** If enabled, smaller images are scaled to match the maximum width or height (whichever is reached first). Allowed values are **True** or **False**. The default is **False** (disabled).
- **MaxImageSize:** Defines the maximum width and height of an image. The maximum image size must be specified in this format: **width, height**. When choosing the maximum image size, consider the size of the slide title. The default is **1280, 590**.
- **CenterHorizontally:** If enabled, images are centered horizontally. Allowed values are **True** or **False**. The default is **True** (enabled).
- **DateFormat:** Defines the date format used when using the **%DATE%** placeholder with the tile and/or image slide. All .NET date formats are supported. The default is **dd/MM/yyyy**.

The following table provides some .NET date format strings:

| Format | Description                                                                |
|--------|----------------------------------------------------------------------------|
| d      | Outputs the day with a single digit if possible (1-31).                    |
| dd     | Outputs the day with two digits (01-31).                                   |
| ddd    | Outputs the abbreviated name of the day, e.g. Mon for Monday.              |
| dddd   | Outputs the full name of the day.                                          |
| M      | Outputs the month with a single digit if possible (1-12).                  |
| MM     | Outputs the month with two digits (01-12).                                 |
| MMM    | Outputs the abbreviated name of the day, e.g. Jan for January.             |
| MMMM   | Outputs the full name of the month.                                        |
| yyyy   | Outputs the year with four digits.                                         |
| h      | Outputs the hour in 12-hour format with a single digit if possible (1-12). |
| hh     | Outputs the hour in 12 hour format with two digits (01-12).                |
| H      | Outputs the hour in 24-hour format with a single digit if possible (0-23). |
| HH     | Outputs the hour in 24hour format with two digits (00-23).                 |
| mm     | Outputs the minutes with two digits.                                       |
| ss     | Outputs the seconds with two digits.                                       |
| t      | Outputs the first character of the AM/PM specifier.                        |
| tt     | Outputs the complete AM/PM specifier.                                      |

### ***Dashboard Export Using the Command Line***

DashboardExport.exe supports the following command line parameters:

**DashboardExport.exe /?|/help** Shows this help.

**DashboardExport.exe /showinfos** Shows information about the presentation used for export.

**DashboardExport.exe <filename>** Creates a presentation with the specified file name by using all PNG images in the same folder.

When using the **showinfos** parameter, DashboardExport.exe prints information about the template (if present) or the default presentation size (if no template is present) to the command prompt. This information (e.g. slide width and height in pixels) can be used to configure Dashboard Export.



# Dimensions RM Scripting

Scripts contain commands for extracting data from the Dimensions RM database and for formatting the results. This appendix describes the syntax of the Dimensions RM script language. If you are familiar with SQL, you will note the similarity between that standard language and the variant of it that has been tailored specifically for Dimensions RM.



## **IMPORTANT! Dimensions RM scripting language is NOT SQL**

Although *similar* to SQL, it is in fact unique to Dimensions RM. Please read this chapter to understand its usage.

The RM scripting language:

- Is an interpreted language. This helps to prevent SQL injection attacks.
- Uses a database meta model so class names are *not* real database table names.

A Dimensions RM reporting script contains commands that tell Dimensions RM what data to extract from the instance and how to format it. The following types of commands can be included in a script:

- **SELECT Statement**: **SELECT** defines the data (object attributes) to be extracted.
- **CALCULATE Statement**: **CALCULATE** performs computations based on the extracted data.
- **XREF Statement**: **XREF** controls cross references that follow links between objects.
- **PLUS Statement**: **PLUS** concatenates **SELECT** statements.
- **COMMENT Statement**: **COMMENT** provides descriptive information that is not interpreted by Dimensions RM.

## SELECT Statement

For those familiar with SQL (Structured Query Language), the **SELECT** statement in a script appears similar in many ways to the SQL **SELECT** statement.

A **SELECT** statement may contain the following elements (mandatory elements are indicated in bold print):

- The reserved word **SELECT**
- A list of display elements (attributes) each preceded by a <DTPtag>. The DTPtag specifies a column heading for tabular displays or, when the script results are saved in a formatted file, a paragraph style or format for desktop publishing tools. At least one attribute must be selected. If you do not want a column header or a paragraph style, you must indicate that with empty delimiters, as in <>.
- The reserved word **FROM**
- The RM class name

- The reserved word WHERE
- Conditions under which to make the extraction
- The reserved words ORDER BY
- A list of fields by which to order extraction
- Metrics computations to be performed

Note the format of this statement – SELECT <>'attribute' FROM 'class'. The display attributes must be preceded by the characters '<' and '>'. If these characters are not present, the attribute is not included in the report document.

A SELECT statement may contain as many display elements as required, but each element must be defined as an attribute of the given class.

For example:

```
SELECT <>TEST_ID <>TEST_DESCRIPTION <>TEST_NOTES <>REQUIRED_RESULT
FROM TEST
```

This SELECT statement produces a list of all the objects of class TEST in the Dimensions RM database, in Dimensions RM key order. The test identifier, description, notes, and required result attributes appear in the output in the same order as they appear in the display list.

```
SELECT <Requirement ID>REQ_ID <Status> STATUS <Text>Text FROM
CustomerRequirements WHERE STATUS != 'Deleted' ORDER BY STATUS
```

This select statement produces a list of all objects in class CustomerRequirements that have not been deleted. The list is intended for tabular output on the screen or in a CSV file, so the column headings are included. The result will be ordered by the STATUS attribute value in alphabetical order.

## DTPtag

You can specify a DTPtag for each attribute in your report to control output formatting. For tabular output, the DTPtag is used as a column heading. For document format, such as RTF, the DTPtag is used to identify a paragraph style to be associated with the attribute value. The tag name is placed between the < and > characters that precede a display list element. The tag name may be up to 19 characters in length.

The tag name can only include the '#' character if it is preceded by a backslash (\).

When used with a table, the tag name appears as the column heading, with a column width determined by Dimensions RM. You can specify the column width by preceding the tag with '!n', where n is the desired column width in characters. Column widths are not supported in the script generator wizard.

For example (DTPtags are shown in **bold**):

```
SELECT !8<Test ID>TEST_ID !25<Description>TEST_DESCRIPTION
!25<Test Notes>TEST_NOTES !25<Results>REQUIRED_RESULT FROM TEST
```

## DTP\_TEXT Display Item

Dimensions RM supports a display list element, called DTP\_TEXT, which does not correspond to an attribute. For tabular output, DTP\_TEXT can be used to insert a blank

column into the output. For document output, its purpose is to insert a "blank" component tag (that is, a DTP tag with no text or data attached). This enables the inclusion into documents of headers and footers, and repeated text strings.

As many DTP\_TEXT items as desired may be included in the display list, and their position within the display list is significant.

For example, to separate each TEST record in a list with a marker (for example, a separator line):

```
SELECT <Test ID>TEST_ID <Description>TEST_DESCRIPTION <Test
Notes>TEST_NOTES <Result>REQUIRED_RESULT <separator>DTP_TEXT FROM
TEST
```

Within RM Word, the tag separator must be defined to produce a paragraph of the required type, for example, a line of hyphens or asterisks.

## RTM\_KEYWORD Display Item

Dimensions RM supports another display list item that does not correspond to an attribute. Use RTM\_KEYWORD to request Dimensions RM to return a list of linked collections for each object. For example:

```
SELECT <Test ID>TEST_ID <Description>TEST_DESCRIPTION <Test
Notes>TEST_NOTES <Result>REQUIRED_RESULT
<Linked Collections>RTM_KEYWORD FROM TEST
```

## WHERE Clause

For many reporting purposes, only a subset of the objects in a class is required. The WHERE reserved word is used in conjunction with a SELECT statement to specify selection constraints in terms of attribute values, collection membership, or relationship linkages. The WHERE clause syntax is of the general form:

WHERE ConditionalExpression

where ConditionalExpression is a logical expression whose elements are of the form:

- AttributeName Operator Valuelist
- Direction Relationship
- Group {in | not in} (collectionList)
- SpecialConstraint

The elements of a conditional expression are combined using the logical operators AND and OR. Any number of conditions may be applied to a SELECT statement which can be combined using the reserved words AND and OR. Both AND and OR have the same precedence and are left associative. Parentheses may be used to change the precedence.

The following table describes attribute types used in Dimensions RM instance schemas and their allowed operators.

| Attribute Type  | Operators                                                     | Notes                                                                                  |
|-----------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Alphanumeric    | INITIALIZED, NOT INITIALIZED, IN, NOT IN, =, !=, <, >, <=, >= | For further information, see chapter <a href="#">"Comparing Text" on page 657</a> .    |
| Date            | INITIALIZED, NOT INITIALIZED, =, !=, <, >, <=, >=             | For further information, see chapter <a href="#">"Comparing Dates" on page 658</a> .   |
| File Attachment |                                                               | Not supported                                                                          |
| Group           | INITIALIZED, NOT INITIALIZED, IN, NOT IN, =, !=, <, >, <=, >= | For further information, see chapter <a href="#">"Comparing Text" on page 657</a> .    |
| List            | INITIALIZED, NOT INITIALIZED, IN, NOT IN, =, !=, <, >, <=, >= | For further information, see chapter <a href="#">"Comparing Text" on page 657</a> .    |
| Numeric         | INITIALIZED, NOT INITIALIZED, IN, NOT IN, =, !=, <, >, <=, >= | For further information, see chapter <a href="#">"Comparing Numbers" on page 657</a> . |
| Text            | INITIALIZED, NOT INITIALIZED, IN, NOT IN, =, !=, <, >, <=, >= | For further information, see chapter <a href="#">"Comparing Text" on page 657</a> .    |

## Comparing Numbers

| Operator        | Description                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|
| INITIALIZED     | The attribute contains a value.<br><b>Example:</b> TEST_ATTRIBUTE INITIALIZED                                                |
| NOT INITIALIZED | The attribute contains no value.<br><b>Example:</b> TEST_ATTRIBUTE NOT INITIALIZED                                           |
| =               | The attribute value must be identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE = 5                        |
| !=              | The attribute value must <b>not</b> be identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE != 5            |
| <               | The attribute value must be less than the specified value.<br><b>Example:</b> TEST_ATTRIBUTE < 5                             |
| >               | The attribute value must be larger than the specified value.<br><b>Example:</b> TEST_ATTRIBUTE > 5                           |
| <=              | The attribute value must be less or identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE <= 5               |
| >=              | The attribute value must be larger or identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE >= 5             |
| IN              | The attribute value must be identical to one of those provided<br><b>Example:</b> TEST_ATTRIBUTE IN (3, 4, 5)                |
| NOT IN          | The attribute value must <b>not</b> be identical to one of those provided<br><b>Example:</b> TEST_ATTRIBUTE NOT IN (3, 4, 5) |

## Comparing Text

When comparing text, the casing of a word is very important. This is because for a computer, a text is represented by numbers. All capital letters have a lower value than lowercase letters, i.e. "A" has the value of 65, while "a" has the value of 97. For the following table (except for operators INITIALIZED and NOT INITIALIZED), it is assumed that there are two requirements, REQ1 and REQ2. For REQ1, the attribute TEST\_ATTRIBUTE has the value "Test". For REQ2, the attribute TEST\_ATTRIBUTE has the value "test".

| Operator        | Description                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| INITIALIZED     | The attribute contains a value.<br><b>Example:</b> TEST_ATTRIBUTE INITIALIZED                                                                       |
| NOT INITIALIZED | The attribute contains no value.<br><b>Example:</b> TEST_ATTRIBUTE NOT INITIALIZED                                                                  |
| =               | The attribute value must be identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE = 'Test'<br>The example returns REQ1.             |
| !=              | The attribute value must <b>not</b> be identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE != 'Test'<br>The example returns REQ2. |

| Operator | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <        | The attribute value must be less than the specified value.<br><b>Example:</b> TEST_ATTRIBUTE < 'test'<br>The example returns REQ1.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| >        | The attribute value must be larger than the specified value.<br><b>Example:</b> TEST_ATTRIBUTE > 'Test'<br>The example returns REQ2.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <=       | The attribute value must be less or identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE <= 'test'<br>The example returns REQ1 and REQ2.                                                                                                                                                                                                                                                                                                                                                                                            |
| >=       | The attribute value must be larger or identical with the specified value.<br><b>Example:</b> TEST_ATTRIBUTE >= 'Test'<br>The example returns REQ1 and REQ2.                                                                                                                                                                                                                                                                                                                                                                                          |
| IN       | The attribute value must be identical to one of those provided<br><b>Example:</b> TEST_ATTRIBUTE IN ('Test', 'test')<br>The example returns REQ1 and REQ2.                                                                                                                                                                                                                                                                                                                                                                                           |
| NOT IN   | The attribute value must <b>not</b> be identical to one of those provided<br><b>Example:</b> TEST_ATTRIBUTE NOT IN ('Test', 'test')<br>The example returns no requirements                                                                                                                                                                                                                                                                                                                                                                           |
| LIKE     | The attribute value must match the specified search pattern. Note that the text casing is relevant.<br><b>Examples:</b> <ul style="list-style-type: none"> <li>TEST_ATTRIBUTE LIKE 'Business*'<br/>The value must start with the word "Business".</li> <li>TEST_ATTRIBUTE LIKE '*business.'</li> <li>TEST_ATTRIBUTE LIKE ~'*business*'<br/>The value must contain the word "business".</li> </ul> <p>* or %: A wildcard for any set of characters.<br/>_: A wildcard for a single character.</p>                                                     |
| NOT LIKE | The attribute value must <b>not</b> match the specified search pattern. Note that the text casing is relevant.<br><b>Examples:</b> <ul style="list-style-type: none"> <li>TEST_ATTRIBUTE NOT LIKE 'Business*'<br/>The value must not start with the word "Business".</li> <li>TEST_ATTRIBUTE NOT LIKE '* business.'</li> <li>TEST_ATTRIBUTE NOT LIKE ~'*business*'<br/>The value must not contain the word "business".</li> </ul> <p>* or %: A wildcard character for any set of characters.<br/>_: A wildcard character for a single character.</p> |

### Comparing Dates

The syntax for comparing dates is similar to the syntax of comparing strings. However, important for comparing dates is that the query format matches the format of the attribute. When starting a new script, you might prefer selecting dates through the wizard.

| Operator        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| INITIALIZED     | The attribute contains a value.<br><b>Example:</b> TEST_ATTRIBUTE INITIALIZED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NOT INITIALIZED | The attribute contains no value.<br><b>Example:</b> TEST_ATTRIBUTE NOT INITIALIZED                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| =               | The attribute value must be identical with the specified value.<br><b>Examples:</b> <ul style="list-style-type: none"> <li>■ TEST_ATTRIBUTE = '01-SEP-2024'</li> <li>■ TEST_ATTRIBUTE = '01-SEP-2024@01:02:03'</li> </ul>                                                                                                                                                                                                                                                                                                                                    |
| !=              | The attribute value must <b>not</b> be identical with the specified value.<br><b>Examples:</b> <ul style="list-style-type: none"> <li>• TEST_ATTRIBUTE != '01-SEP-2024'<br/>Any date which is not September 1<sup>st</sup>, 2024 matches this criterion.</li> <li>• TEST_ATTRIBUTE != '01-SEP-2024@01:02:03'<br/>Any which is not September 1<sup>st</sup>, 2024 at 01:02:03 matches this criterion, e.g. August 30<sup>th</sup>, 2022 at 12:05:45;<br/>September 1<sup>st</sup>, 2024 at 01:02:02 or September 2<sup>nd</sup>, 2024 at 02:03:04.</li> </ul> |
| <               | The attribute value must be less than the specified value.<br><b>Examples:</b> <ul style="list-style-type: none"> <li>• TEST_ATTRIBUTE &lt; '01-SEP-2024'<br/>Any date before September 1<sup>st</sup>, 2024 matches this criterion.</li> <li>• TEST_ATTRIBUTE &lt; '01-SEP-2024@01:02:03'<br/>Any date before September 1<sup>st</sup>, 2024 at 01:02:03 matches this criterion: e.g., September 1<sup>st</sup>, 2024 at 01:02:02.</li> </ul>                                                                                                               |
| >               | The attribute value must be larger than the specified value.<br><b>Examples:</b> <ul style="list-style-type: none"> <li>• TEST_ATTRIBUTE &gt; '01-SEP-2024'<br/>Any date after September 1<sup>st</sup>, 2024 matches this criterion, e.g. September 2<sup>nd</sup>, 2024 or January 1<sup>st</sup>, 2025.</li> <li>• TEST_ATTRIBUTE &gt; '01-SEP-2024@01:02:03'<br/>Any date after September 1<sup>st</sup>, 2015 at 01:02:03 matches this criterion.</li> </ul>                                                                                            |

| Operator | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <=       | <p>The attribute value must be less or identical with the specified value.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"><li>• TEST_ATTRIBUTE &lt;= '01-SEP-2024'<br/>The date must be September 1<sup>st</sup>, 2024 or before to match this criterion, e.g. August 30<sup>th</sup>, 2024 or December 31<sup>st</sup>, 2023.</li><li>• TEST_ATTRIBUTE &lt;= '01-SEP-2024@01:02:03'<br/>The date must be September 1<sup>st</sup>, 2024 at 01:02:03 or before to match this criterion.</li></ul>                                                                                              |
| >=       | <p>The attribute value must be larger or identical with the specified value.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"><li>• TEST_ATTRIBUTE &gt; '01-SEP-2024'<br/>The date must be September 1<sup>st</sup>, 2024 or after to match this criterion, e.g. September 2<sup>nd</sup>, 2024 or January 1<sup>st</sup>, 2025.</li><li>• TEST_ATTRIBUTE &gt; '01-SEP-2015@01:02:03'<br/>The date must be September 1<sup>st</sup>, 2015 at 01:02:03 or after to match this criterion, e.g. September 2<sup>nd</sup>, 2015 at 12:05:45 or September 1<sup>st</sup>, 2015 at 01:02:04.</li></ul> |



| Operator | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LIKE     | <p>The attribute value must match the specified search pattern.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• TEST_ATTRIBUTE LIKE ~'17-*-2015'<br/>The date must be 17th of any month in 2015.</li> <li>• TEST_ATTRIBUTE LIKE ~'*-SEP-2015'<br/>The date must be any day in September 2015.</li> <li>• TEST_ATTRIBUTE LIKE ~'*-SEP-%'<br/>The date must be any day in September of any year.</li> <li>• TEST_ATTRIBUTE LIKE '01-SEP-2015@*'<br/>The date must be September 1<sup>st</sup>, 2015; the time is irrelevant.</li> </ul> <p>* or %: A wildcard character for any set of characters.<br/>_: A wildcard character for a single character.</p>                    |
| NOT LIKE | <p>The attribute value must <b>not</b> match the specified search pattern.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• TEST_ATTRIBUTE NOT LIKE ~'17-*-2015'<br/>The date must not be 17th of any month in 2015.</li> <li>• TEST_ATTRIBUTE NOT LIKE ~'*-SEP-2015'<br/>The date must not be any day in September 2015.</li> <li>• TEST_ATTRIBUTE NOT LIKE ~'*-SEP-*'<br/>The date must not be any day in September of any year.</li> <li>• TEST_ATTRIBUTE NOT LIKE '01-SEP-2015@%'<br/>The date must not be September 1<sup>st</sup>, 2015.</li> </ul> <p>* or %: A wildcard character for any set of characters.<br/>_: A wildcard character for a single character.</p> |

### Direction Relationship

This constraint form is used to identify linked objects within a particular relationship. For example, given a relationship between classes SystemRequirement (the primary class) and Test (the secondary class), you could search for system requirement objects that are linked to test objects. Alternatively, finding those that are not linked can help you identify work that is yet to be completed. The following “directions” are defined:

- PRIMARY\_IN
- NOT\_PRIMARY\_IN
- SECONDARY\_IN
- NOT\_SECONDARY\_IN

These operators are used to extract only those objects which have links (or not) in a named relationship, and can therefore be used to create ‘compliance’ lists (such as a list of tests which have or have not been linked to requirements)

Following are Direction Relationship examples (based on a relationship named Tested\_By with SystemRequirements as the primary and Test as the secondary class).

- **PRIMARY\_IN Tested\_By**  
Finds SystemRequirements that are linked to at least one Test object.
- **NOT SECONDARY\_IN Tested\_By**  
Finds Test objects that are not associated with any SystemRequirement objects

For SELECT statements involving requirements, there are two pre-defined relationships that may also be used. These are SOURCE and IMMEDIATE. The effect of using each of the relationship operators with each of the SOURCE and IMMEDIATE relationships is described in the following table.

| Operator         | IMMEDIATE                                                           | SOURCE                                                              |
|------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|
| PRIMARY_IN       | Requirements that have children (not the lowest level requirements) | Requirements that have no parents (the source requirements)         |
| SECONDARY_IN     | Requirements that have parents (derived requirements)               | Requirements that have no children (the lowest level requirements)  |
| NOT_PRIMARY_IN   | Requirements that have no children (the lowest level requirements)  | Requirements that have parents (derived requirements)               |
| NOT_SECONDARY_IN | Requirements that have no parents (the source requirements)         | Requirements that have children (not the lowest level requirements) |

*Group {in | not in} (collectionList)*

This constraint form is used to identify objects with respect to their linkage to one or more collections. For example, you can define collections to help you manage prioritization. A parent collection, named Priorities could have child collections named Priority 1, Priority 2, and so on. You can use these collections to organize reports focused on specific priorities or to find items that have yet to be prioritized:

Following are collection constraint examples.

- **GROUP IN ('Priority 1', 'Priority 2')**  
Finds objects linked to either Priority 1 or Priority 2 collections.
- **GROUP NOT IN ('Priorities')**  
Finds objects not yet prioritized.

### **Special Constraint**

This constraint form supports built-in attributes of classes based on the requirement class type. These classes include built-in text attributes named Query and Clarification, which are intended for use with questions and answers to do with the requirement itself. The SpecialConstraint keywords listed below take no additional operands:

- **HAVING\_CLARIFICATION\_TEXT**
- **HAVING\_NO\_CLARIFICATION\_TEXT**
- **HAVING\_QUERY\_TEXT**
- **HAVING\_NO\_QUERY\_TEXT**

Following is a SpecialConstraint example:

- `SELECT <Requirement ID>REQ_ID <Status> STATUS <Text>Text FROM CustomerRequirements WHERE HAVING_QUERY_TEXT`

Finds identifier, status, and text from objects of class CustomerRequirements with non-empty Query attribute.

### Prompting

Scripts can also contain specially formatted prompts that will be displayed when the script is run interactively to prompt users for information. The syntax for prompting in scripts is:

`<#prompt#>` anywhere in the script. For example: `select <id>object_id from ECP where object_id = '<#enter id#>'`

This prompting syntax also allows for prompted values to be used as variables in multiple places within a script. For example:

- `select <id>object_id from CR where object_id='<#enter id^var1#>'`  
xref
- `select <id>object_id from SR where object_id='<#^var1#>'`

The value entered by the user for the object ID of the CR class will also be used in the where clause of the SR class select. The "^" indicates that the value should be stored into the variable following the "^" and that variable name can be used without a prompt elsewhere. If a second prompt ^ variable name is found with the same variable name, the variable's value will be changed.

## ORDER BY Clause

The ORDER BY clause can be added to the SELECT statement to specify the order in which the records should be returned. The ORDER BY clause is added after the WHERE clause or after the class name if no WHERE clause is included. The reserved words ORDER BY must be followed by a comma separated list of attributes. Any number of attributes of a class can be used to qualify the order of extraction.

### Sorting in Ascending Order

By default, the ORDER BY clause sorts in ascending order.

#### Examples:

- `SELECT <>TEST_SETUP FROM TEST ORDER BY TEST_ID, TEST_DATE`
- `SELECT <>TEST_SETUP FROM TEST WHERE TEST_ID = '7' ORDER BY TEST_DATE, REQUIRED_RESULT`



#### NOTE ORDER BY attribute

When the ORDER BY attribute has a NULL value, it is placed at the end of the list (that is, it is considered to have the highest value).

### Sorting in Descending Order

To sort in descending order, append **|DESC|** to the attribute name.

#### Examples:

- `SELECT <>TEST_SETUP FROM TEST  
ORDER BY TEST_ID|DESC|, TEST_DATE|DESC|`
- `SELECT <>TEST_SETUP FROM TEST  
WHERE TEST_ID = '7'  
ORDER BY TEST_DATE|DESC|, REQUIRED_RESULT|DESC|`



#### **NOTE ORDER BY attribute**

When the **ORDER BY** attribute has a NULL value, it is placed at the top of the list (that is, it is considered to have the highest value).

### Sorting Dewey Decimal Formatted Values

It is common for reports to be ordered by attributes that have a Dewey decimal format (e.g. 1.2.3.12). Often the PARAGRAPH\_ID attribute will have this kind of format. A straightforward ASCII sort on these codes will not return a correct order, since it is performed on a character-by-character basis, rather than by the numbering.

A Dewey decimal code needs to have letters (upper or lower case) and numbers separated by a decimal point or a hyphen. The following examples are legal Dewey decimal codes:

- 1.2.5
- a.b
- 3
- d
- d-1-2

There is no restriction on the length of the code.

To perform a Dewey decimal ordering, precede the appropriate attribute with the **@** symbol.

#### Example:

```
SELECT <PUID>PUID <Title>TITLE <Paragraph ID>PARAGRAPH_ID FROM REQ
ORDER BY @PARAGRAPH_ID
```

Descending sorting can also be used for attributes which contain dewey decimal formatted values by adding **|DESC|**.

## CALCULATE Statement

The available calculations are as follows:

- A **count** of records selected on any field
- The **total** of the values of records selected on numeric fields

- The **average** value of records selected on numeric fields
- The **minimum** value selected on numeric fields
- The **maximum** value selected on numeric fields
- **Normalization** of values selected by a simple arithmetic expression

The results of the count, total, average, minimum and maximum metrics are displayed at the bottom of the report. Normalization causes each record value in the body of the report to be changed according to the arithmetic expression.

NULL fields are handled in two ways:

- If only records with values in them are to be used (POPULATED), the NULL fields are ignored (this is the default)
- If all records are to be used regardless of their content (ALL), NULL fields are treated as having the value 0 (zero).

The format of the CALCULATE statement is as follows:

- The CALCULATE keyword appears first to indicate that metrics will be performed.
- A list of calculation types (COUNT, TOTAL, AVERAGE, MINIMIZE, MAXIMIZE or NORMALIZE) and the fields applicable (the fields should be separated by commas).
- Each calculation type keyword can be prefixed by an ALL or POPULATED flag. If none is supplied, the default of POPULATED is used.

For TOTAL, COUNT, AVERAGE, MINIMUM and MAXIMUM:

- The field name should be prefixed by a mandatory "tag" in the format [string] which defines a string to be used in the report to identify that particular value. Note that [] is valid.
- Each separate [tag] field entry in the list may be prefixed by the ALL or POPULATED flag.

For normalization:

- Each entry has the form "fieldname operator value", where operator is any of '+', '-', '\*', '/' and value is a real or integer number. No tags are applicable for normalization.
- Each separate [tag] field entry in the list may be prefixed by the ALL or POPULATED flag.

For example:

```
SELECT <number>PARTS_AVAILABLE FROM REQ
CALCULATE COUNT [count]PARTS_AVAILABLE
TOTAL [total]PARTS_AVAILABLE
AVERAGE [average]PARTS_AVAILABLE
MINIMIZE [min]PARTS_AVAILABLE
MAXIMIZE [max]PARTS_AVAILABLE
```

To modify the values of the attribute PARTS\_AVAILABLE in the report, you can use the NORMALIZE metric:

```
SELECT <id>REQUIREMENT_KEY <number>PARTS_AVAILABLE FROM REQ CALCULATE
NORMALIZE ALL PARTS_AVAILABLE + 5
```

## XREF Statement

The XREF statement lets you show the linkage or traceability between objects. XREF links the SELECT statement, immediately following it with a previous SELECT statement.

The XREF statement must contain the reserved word XREF and the name of the relationship that defines the traceability. It may also contain the reserved words PRIMARY, SECONDARY, PRIMARY\_HISTORY, SECONDARY\_HISTORY and either FIRST, SECOND, THIRD, FOURTH, or a number.

If both SELECT statements select from the same class, then the XREF statement must be modified with either the PRIMARY or SECONDARY reserved words. Use PRIMARY if the second SELECT statement refers to the primary side of the relationship. Use SECONDARY if the second SELECT statement refers to the secondary side of the relationship.

**NOTE** Script generator wizard

The script generator wizard does not support the reserved words PRIMARY\_HISTORY, SECONDARY\_HISTORY, FIRST, SECOND, THIRD, and FOURTH, and the use of a number to refer to SELECT statements.

The XREF statement must appear between two SELECT statements, the latter of which must be for a class defined to be a member of the relationship named in the XREF statement. Also required is that at least one of the SELECT statements preceding the XREF statement must concern the other class named in the relationship.

For example, suppose a relationship has been defined called REQ\_TEST that links the REQ class of type requirement (as the PRIMARY object in the relationship) to a class called TEST (the SECONDARY object), and traceability links have been created between objects in the classes. A list of requirements showing their related TESTs can be created using:

```
SELECT <ID>REQ_ID <>TEXT FROM REQ WHERE STATUS='CURRENT'
XREF REQ_TEST
SELECT <TEST ID>TEST_ID <>TEST_DESCRIPTION FROM TEST
```

This script produces a list of every requirement from the REQ class where the STATUS attribute has the value "Current", and if a requirement participates in the relationship REQ\_TEST, its corresponding TESTs are extracted. Note that this form of the script extracts each of the requirements that match the condition, then the TESTs that are linked to them. If the condition was such that more than one requirement complied, and a TEST is linked to more than one requirement, it may appear more than once in the output.

To list only those requirements that are related to TESTs, append a condition as follows:

```
SELECT <ID>REQ_ID <>TEXT FROM REQ WHERE STATUS='CURRENT'
AND PRIMARY_IN REQ_TEST
XREF REQ_TEST
SELECT <TEST ID>TEST_ID <>TEST_DESCRIPTION FROM TEST
```

The PRIMARY\_IN operator has been used since REQ was defined as primary in the REQ\_TEST relationship.

Using the NOT\_PRIMARY\_IN operator:

```
SELECT <ID>REQ_ID <>TEXT FROM REQ WHERE STATUS='CURRENT'
AND NOT PRIMARY_IN REQ_TEST
XREF REQ_TEST
SELECT <TEST ID>TEST_ID <>TEST_DESCRIPTION FROM TEST
```

This produces a list containing only requirements, since any requirement not related to any TESTs, by definition will not cause any TESTs to be extracted.

The following script poses a problem:

```
SELECT <original>REQ_ID FROM REQ XREF REQ_TEST SELECT
<test>TEST_DESCRIPTION FROM TEST XREF SOURCE SECONDARY SELECT <low
child>REQUIREMENT_KEY FROM REQ XREF REQ_EVENT SELECT
<events>EVENT_TEXT FROM EVENT
```

It is valid (providing the objects, attributes, and relationships have been defined), but the third XREF statement (XREF REQ\_EVENT) implies the class named in the next SELECT statement (EVENT) must be linked in the relationship REQ\_EVENT. Since the relationship links REQs to EVENTS and the next class is EVENT, they must be linked to REQs in a previous SELECT statement.

The script contains two instances of REQ in SELECT statements (SELECT statements 1 and 3). **By default, the first SELECT statement for a matching class is used.** So in the example the EVENTS are those linked to the first set of REQs (the original requirements).

There are four reserved words that allow you to choose where the linkage must exist in the event of duplicity of objects in the script:

- FIRST
- SECOND
- THIRD
- FOURTH



**NOTE** These four reserved words

These reserved words are for compatibility with earlier versions of RM, but they are not supported in the script generator wizard.

The reserved words express the number of the SELECT statement to which the next SELECT statement is linked. One of these reserved words may appear as the final word in an XREF statement. It may be necessary to refer to a SELECT statement later in the script than the fourth one. This can be specified using a positive integer.

To change the previous script so that the EVENTS linked to the source REQUIREMENTS are displayed, append the reserved word THIRD or the number 3 to the final XREF statement.

```
SELECT <original>REQUIREMENT_KEY FROM REQ XREF REQ_TEST SELECT
<test>TEST_DESCRIPTION FROM TEST XREF SOURCE SECONDARY SELECT <low
child>REQUIREMENT_KEY FROM REQ XREF REQ_EVENT THIRD SELECT
<events>EVENT_TEXT FROM EVENT
```

The final XREF statement now means the class named in the next SELECT statement (EVENT) must be linked in the relationship REQ\_EVENT to the objects extracted by the third SELECT statement. Since the relationship REQ\_EVENT links REQs to EVENTS and both are represented in the SELECT statements, this is a valid script and produces the desired output.

## PLUS Statement

The PLUS statement can be used to join multiple scripts into one script. The outcome of the extraction using the resultant script is multiple reports produced in one data extraction run.

For example:

```
SELECT <4.1_Title>DTP_TEXT <>TEXT FROM REQ WHERE
PRIMARY_IN IS_ALLOCATED_TO_HARDWARE
PLUS SELECT <4.2_Title>DTP_TEXT <>TEXT FROM REQ WHERE
PRIMARY_IN IS_ALLOCATED_TO_SOFTWARE
PLUS SELECT <4.3_Title>DTP_TEXT <>TEXT FROM REQ WHERE
PRIMARY_IN IS_ALLOCATED_TO_MANUAL_OPERATION
```

## COMMENT Statement

You can use comments to provide documentation within scripts to be used from the command line. The script generator wizard does not support comments. Comments can be inserted into a script in several formats:

- Characters after ##, -- or \$! are ignored until the start of a new line.
- Multiple line comments can be enclosed within pairs of comment delimiters { }, /\* \*/ or (\* \*).

For example:

```
/* Version 1.0
Date: 14th May 2006*/
SELECT <key>REQUIREMENT_KEY ## extract RMs no.
FROM REQ-- for the req class
WHERE SOURCE_REQUIREMENTS = 'Y'$! of all original requirements
{Now find all derived requirements}
XREF SOURCE SECONDARY
(* and extract the RM nos *)
SELECT REQUIREMENT_KEY FROM REQ
```



# Adding Rich Format Text to Query Prompts

Using Rich Text in a query prompt can provide extra information to the user. For example, the following is a standard query prompting for a Marketing Requirement ID:

The screenshot shows a web application interface with a blue header bar containing 'DRM DIMENSIONS RM', navigation links, and a user profile. Below the header, a breadcrumb trail reads 'RMDemo > RMDemo > Marketing\_Requirements > Selected Requirements'. The main content area is titled 'Selected Requirements' and contains the text: 'The following parameters must be provided to run this report. Please provide a value for each of the parameters below.' followed by 'Enter Rqmt ID for MARKETING\_REQUIREMENTS:' and a text input field. At the bottom right, there is a 'Run Report' button and a checkbox labeled 'Remember these parameters'.

This is the layout we want to achieve:

This screenshot shows the same interface as the previous one, but with rich format text added to the prompt. The text 'Please enter the Requirement IDs in the field/box to the right' is followed by a numbered list: '1. Each requirement ID must be enclosed in single quotes', '2. If multiple IDs are requested, separate them with commas', and '3. Please note that values are CASE sensitive'. Below this, an 'Examples:' section shows three lines of example input: 'MRKT\_000002', 'MRKT\_000002, MRKT\_000003', and 'MRKT\_000002, MRKT\_000003, MRKT\_000004, MRKT\_000005'. The rest of the interface, including the input field and the 'Run Report' button, remains the same.

The following steps describe how to modify a query prompt to provide this extra information:

- 1 Select **Class Report** from the **New** menu.
- 2 Select the desired class ("Marketing Requirements" in this example).
- 3 Specify a query name.
- 4 Select the **Attribute Constraints** tab.
- 5 Click on the arrow for the **Rqmt ID** field and select **Enter at runtime**.
- 6 In the main window, select **Requirement** from the **New** menu.
- 7 Select a class with an HTML enabled attribute and click into such an attribute.

- 8 Enter the text you want to use with the query prompt.
- 9 From the **Tools** menu, select **Source code** to get the raw HTML code. Select all then copy this text/html.

- 10 Close the *HTML Source Editor* window and the *New Marketing\_Requirements* window.
- 11 In the *Query By Class: Marketing\_Requirements* window, click on the **View Script** button which is located at the left window corner at the bottom. The script looks like this:

```
select <Rqmt ID>PUID <Title>TITLE from Marketing_Requirements where
PUID LIKE ~'<#Enter Rqmt ID#>' and STATUS IN ('Current') order by
PUID calculate all count[Row Count:]PUID
```

- 12 Locate the prompt '<#Enter Rqmt ID#>' and delete the text between the two "#" characters so that only '<##>' remains.
- 13 Put the cursor between the two "#" characters and press the "Enter" key twice. Your script should look like this:

```
Script: select <Rqmt ID>PUID <Title>TITLE from Marketing_Requirements where PUID LIKE ~'<#
##>' and STATUS IN ('Current') order by PUID calculate all count[Row Count:]PUID
```

**14** Paste the HTML code into the blank line, so it looks like this:

Script:

```

select <Rqmt_ID>PUID <Title>TITLE from Marketing_Requirements where PUID LIKE ~'<#
<p>Please enter the Requirement IDs in the field/box to the right</p>

Each requirement ID must be enclosed in single quotes
If multiple IDs are requested, separate them with commas
Please note that values are CASE sensitive

<p></p>
<p style="margin-left: 40px;">Examples:
</p>
<p style="margin-left: 80px;">'MRKT_000002'</p>
<p style="margin-left: 80px;">'MRKT_000002', 'MRKT_000003'</p>
<p style="margin-left: 80px;">'MRKT_000002', 'MRKT_000003', 'MRKT_000004', 'MRKT_000005'</p>
#>' and STATUS IN ('Current') order by PUID calculate all count[Row Count:]PUID

```

**15** Click **Save and Run**.



## Chapter 14

---

# Configuring Special Functions

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## About Special Functions

Some functions in Dimensions RM are not enabled by default because special files and/or classes must be created to support them. Implementations involving the import or inclusion of files into the Dimensions RM server environment must be completed by the System Administrator. Activation within each instance may be accomplished by the Instance Administrator.

Many customers implement special functions in a test environment, or a test instance, allowing users to test drive new functionality and then to judge for themselves the benefit it brings to their own processes.

## Configuring NLP Complexity Analysis

Natural Language Processing, as implemented in Dimensions RM, is based on the Flesch-Kincaid readability tests. Warnings or errors may be raised based on the complexity of a text attribute; what constitutes complexity can be decided by the users.

A pre-requisite to the inclusion of the complexity analysis is to download and incorporate the jar file, following the instructions below:

### To incorporate the jar file:

- 1 Download the file, `whelk-flesch-kincaid-0.1.11.jar` from the maven repository: [whelk-flesch-kincaid](#)
- 2 Stop the **Dimensions RM Common Tomcat** service.
- 3 Store the downloaded jar file in the Common Tomcat webapps lib folder, for example: `...\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps\rtmBrowser\WEB-INF\lib`.
- 4 Start the **Dimensions RM Common Tomcat** service.

Complexity analysis can be applied to selected classes within an instance. Once the System Administrator has made the function available, it can be activated and monitored by the Instance Administrator. Similarity analysis is enabled and monitored by the Instance Administrator.

To enable see "[Complexity Analysis](#)" on [page 80](#).

For information on the application of Complexity Analysis in Dimensions RM see "[NLP Complexity Analysis](#)" on [page 208](#).

## Configuring NLP Similarity Analysis

Natural Language processes design to analyze sentence similarity or semantic textual similarity is a measure of how similar two pieces of text are, or to what degree they express the same meaning.

To make **Similarity Analysis** available to Dimensions RM users, perform the following:

- 1 If you have implemented Complexity Analysis ("Configuring NLP Complexity Analysis" on page 674) proceed to Step 3.
- 2 Download the file, **whelk-flesch-kincaid-0.1.11.jar** from the maven repository: [whelk-flesch-kincaid](#).
- 3 From <https://repo1.maven.org/maven2/org/tensorflow/tensorflow-core-api/0.2.0/> download the file **tensorflow-core-api-0.2.0-windows-x86\_64.jar**
- 4 From <https://tfhub.dev/google/universal-sentence-encoder/4> download the archive **universal-sentence-encoder\_4.tar.gz**. The downloaded file is about 935MB in size.
  - a Using 7zip, extract the downloaded archive; it will extract to a tar file.
  - b Use 7zip once again to extract the contents of the tar. The result will be 2 folders (assets and variables) and the model: saved\_model.pb as shown below.
- 5 Stop the **Dimensions RM Common Tomcat** service.
- 6 If not already present, please copy the **whelk-flesch-kincaid-0.1.11.jar** file into the Common Tomcat webapps lib folder, for example: ...\\Dimensions 25.2\\Common Tools 2.5.0.0\\tomcat\\10.1\\webapps\\rtmBrowser\\WEB-INF\\lib.
- 7 Copy the file **tensorflow-core-api-0.2.0-windows-x86\_64.jar** into the Common Tomcat webapps lib folder, for example: ...\\Dimensions 25.2\\Common Tools 2.5.0.0\\tomcat\\10.1\\webapps\\rtmBrowser\\WEB-INF\\lib.
- 8 In the webapps\\rtmBrowser folder, create a new folder named: **use**. For example: ...\\Common Tools 2.5.0.0\\tomcat\\10.1\\webapps\\rtmBrowser\\use
- 9 Into the new folder place the content extracted from the tar file:

> Common Tools 1.8.6.0 > tomcat > 9.0 > webapps > rtmBrowser > use

| Name           | Date modified      | Type        | Size     |
|----------------|--------------------|-------------|----------|
| assets         | 11/26/2019 3:50 AM | File folder |          |
| variables      | 2/13/2023 6:24 PM  | File folder |          |
| saved_model.pb | 11/26/2019 3:50 AM | PB File     | 8,032 KB |

- 10 Start the **Dimensions RM Common Tomcat** service.

Similarity analysis is enabled and monitored by the Instance Administrator. To enable see ["Similarity Analysis" on page 80](#).

For information on the application of Similarity Analysis in Dimensions RM see ["NLP Similarity Analysis" on page 209](#).

## Configuring Branching and Merging

The document management and category features of RM simplify the management of multiple releases, or custom releases. New requirements, for example, can be assigned to a planned new release, e.g. 3.2.2, of a product while the set of requirements still under

development can be safely controlled in release 3.2.1 by managing requirements in separate documents with reasonable naming conventions.

However, there are organizations providing functionality for printers, cars and planes that require a permanent "Branching". Organizations building guidance systems, software and hardware to open car doors for a variety of models and power engines using components that must be modified for a targeted manufacturer. In such organizations, there is no intent to merge all variants – but there is a need to maintain a common set of requirements as well as to maintain and track variant streams. It should also be possible to compare variants and to share or to merge back into the core.

Dimensions RM supports branching through the use of a Product class, with associated Project classes. Product and Project are class types, the names assigned to these class types are based on the local lexicon.

The product and project classes may be defined by the System Administrator, or by the Instance Administrator once the schema has been defined. To add the classes using RM Manage, follow these steps:

- 1 Start the Class Definition tool as described in chapter ["Starting Class Definition" on page 808](#).

- 2 **Add the Product class:**

**NOTE**

If you are using Agile and have created the **Product** class as part of the Agile configuration, continue with step 3.

- a Right-click the background of your class definition.
- b From the shortcut menu, select **Add Class** and then **Product**.
- c Click into an empty space to place the new class.
- d Change the name to your liking, e.g. *Product* and press **Enter**.

- 3 **Add the Project class:**

- a Right-click the background of your class definition.
- b From the shortcut menu, select **Add Class** and then **Project**.
- c Click into an empty space to place the new class.
- d Change the name to your liking, e.g. *Project* and press **Enter**.

- 4 Save the class definition by clicking  in the toolbar.

## The WIRIS Editor

The WIRIS editor allows users to enter mathematical formulas in Dimensions RM. This functionality is only available for text attributes in HTML format, e.g. HTML enabled text attributes in requirements or chapters in documents.

The following are included in this Section:



To perform the basic WIRIS Installation: [Installing the WIRIS Editor](#)

WIRIS Configuration: [Configuring the WIRIS Editor](#)

Dimensions RM Configuration with WIRIS: [Configuring Dimensions RM for WIRIS](#)

## Installing the WIRIS Editor

In order to use this component go to [www.wiris.com](http://www.wiris.com) and download **MathType for TinyMCE 4**.

For installing the WIRIS editor server component, you need the `pluginwiris_engine.war` file and the `tiny_mce_wiris` directory, which contains additional directories and files. Both, `pluginwiris_engine.war` and `tiny_mce_wiris`, are part of the **MathType for TinyMCE 4** ZIP archive.

**To install the WIRIS editor, follow these steps:**

- 1 Unarchive the **MathType for TinyMCE 4** ZIP archive.
- 2 Copy the `pluginwiris_engine.war` file into the Tomcat installation webapps directory. For example: `C:\Program Files\Open Text\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps`
- 3 Check the folder, `webapps\rtmBrowser\rm\vendor\tiny_mce\plugins`  
If this folder contains a `tiny_mce_wiris` directory, **delete** it.
- 4 Copy the `tiny_mce_wiris` directory into  
`webapps\rtmBrowser\rm\vendor\tiny_mce\plugins`
- 5 Start the Dimensions RM Common Tomcat service.

## Configuring the WIRIS Editor

After installing the WIRIS editor, you need to make some changes to the configuration. The following sections describe how to configure the WIRIS editor and register it with Dimensions RM.

### **Updates to web.xml Settings**

As of Dimensions RM release 24.4 (12.12.1), RM is installed with a secure web.xml configuration.

When installing the WIRIS editor with Dimensions RM release 24.4 or higher or upgrading from any release prior to 24.4, the following changes must be applied.

- 1 Stop the **Dimensions RM Common Tomcat** service.
- 2 Open `<RM Install Dir>\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps\rtmBrowser\WEB-INF\web.xml`

with a text editor, e.g. Notepad.

Find param: `contentSecurityPolicy` and comment the `<init-param>` tags that contain it. The result is as follows:

```
<!-- init-param>
<param-name>contentSecurityPolicy</param-name>
<param-value>frame-ancestors 'self'; form-action 'self'; default-
```

```
src 'self' 'unsafe-inline' 'unsafe-eval' data: blob;;</param-
value>
</init-param-->
```

- 3 Save the file.
- 4 Start the **Dimensions RM Common Tomcat** service.

### **Configuring the Work Directory**

**To configure the work directory for the WIRIS editor, execute these steps:**

- 1 Start the Registry Editor.
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default.
- 3 Double click the TEMP\_DIRECTORY value. This opens the **Edit String** dialog.
- 4 Ensure that the whole path is selected and press **Ctrl+C** to copy it to the Clipboard.
- 5 Paste the copied path into the address box of Windows Explorer and press **Enter**. This navigates to the path you copied.
- 6 Create a new folder and name it *wiris*.
- 7 In Windows Explorer, navigate to <RM Install Dir>\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps\pluginwiris\_engine\WEB-INF\pluginwiris.
- 8 Check if the file configuration.ini exists. If it does not exist, rename configuration.ini.dist to configuration.ini.
- 9 Open the file configuration.ini with a text editor, e.g. Notepad.
- 10 Find the variable wiriscachedirectory.
- 11 Remove the # in front of the variable.
- 12 Replace the existing path (following the = sign) with the path you previously copied to the Clipboard.
- 13 Duplicate the backslash characters in the path for the wiriscachedirectory variable, and add \\wiris to the path, so it will look something like this:  
C:\\Program Files\\Open Text\\Dimensions 25.2\\Common Tools 1.8.6.0\\tomcat\\9.0\\webapps\\rtmBrowser\\temp\\wiris.
- 14 Copy the whole path of the wiriscachedirectory variable to the Clipboard.
- 15 Find the variable wirisformuladirectory.
- 16 Remove the # in front of the variable
- 17 Replace the existing path (following the = sign) with the path you previously copied to the Clipboard.
- 18 Save the file.
- 19 Start the Registry Editor.

- 20 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment  
and select the **Default** registry key.
- 21 Right-click **Default**, point to **New** and then click **String Value**.
- 22 Name the new registry value *WIRIS\_cache\_path*.
- 23 Copy the path you assigned to *wiriscachedirectory* variable to the Clipboard.
- 24 Double-click the registry value *WIRIS\_cache\_path* and paste the path into the **Value data** box.
- 25 Click **OK**.

### **Additional Settings**

**To configure additional settings, execute these steps:**

- 1 Start the Registry Editor.
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment  
and select the **Default** registry key.
- 3 Right-click **Default**, point to **New** and then click **DWORD (32 bit) Value**.
- 4 Name the new registry value *WIRIS\_max\_retries*.
- 5 Double-click registry value *WIRIS\_max\_retries*.
- 6 Click the **Decimal** option.
- 7 Enter **1200** into the **Value** box. The value specifies the maximal number of attempts for reading the equation picture from the cache.
- 8 Click **OK**.
- 9 In Windows Explorer, navigate to <RM Install Dir>\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps\pluginwiris\_engine\WEB-INF\pluginwiris.
- 10 Open the file *configuration.ini* with a text editor (e.g. Notepad).
- 11 To configure the save mode:
  - a Find the variable *wiriseditorsavemode*.
  - b Remove the # in front of the variable.
  - c Replace the existing value (following the = sign) with **image**, so the line reads:  
*wiriseditorsavemode = image*
- 12 To configure the image format:
  - a Find the variable *wirisimageformat*.
  - b Remove the # in front of the variable.
  - c Replace the existing value (following the = sign) with **png**, so the line reads:  
*wirisimageformat = png*
- 13 To configure the editor response format:

- a Find the variable `wirispluginperformance`.
- b Remove the `#` in front of the variable.
- c Replace the existing value (following the `=` sign) with **false**, so the line reads:  
`wirispluginperformance = false`

**14** Save the file.

## Configuring Dimensions RM for WIRIS

The following Sections discuss the RM Configurations for the WIRIS Editor:

- [Configuring the HTML Editor](#)
- [Configuring the Inline HTML Editor](#)
- [Configuring the Editable Grid](#)
- [When configuration is complete, or when changes have been made to the configuration, restart the Dimensions RM Services:](#)

When configuration is complete, or when changes have been made to the configuration, restart the Dimensions RM Services:

- Dimensions RM Common Tomcat
- Dimensions RM Pool Manager

### Configuring the HTML Editor

The following steps describe how to configure the WIRIS editor for the **Edit Attributes** dialog (editing HTML enabled attributes of a single requirement).

**To configure the WIRIS editor for requirements and chapters, do the following:**

- 1** Navigate to the `RM_Install\Common Tools 1.8.6.0\tomcat\9.0\webapps\rtmBrowser\rm\common\js` directory and open the file `htmlEditor.js` with a text editor (e.g. Notepad).
- 2** Locate the **tinyMCE.init** function call.
- 3** In the **plugins** section, add `tiny_mce_wiris` to the existing collection if it does not exist (see sample code below).
- 4** In the **toolbar** section, add `tiny_mce_wiris_formulaEditor` to the existing collection if it does not exist (see sample code below).
- 5** Save the file.

#### Sample Code:

```
plugins: [
 "table image searchreplace print paste fullscreen advlist lists",
 "noneditable autoresize code textcolor linkext charmap mxgraph
 glossary tiny_mce_wiris",
 "colorpicker pagebreak"
],
```

```
toolbar: [
```

```
 "undo redo | styleselect | bold italic forecolor backcolor fontselect
 fontsize select | alignleft aligncenter alignright alignjustify | bullist
 numlist outdent indent | link unlink image fullscreen qpimage mxgraph" +
 (window.suppressGlossarySupport ? "" : " | glossary") + "
 tiny_mce_wiris_formulaEditor"],
```

### Configuring the Inline HTML Editor

The following steps describe how to configure the WIRIS editor for the **Entire Document** view (editing chapter descriptions and HTML enabled attributes of requirements).

**To configure the WIRIS editor for requirements and chapters, do the following:**

1. Navigate to the <RM Install Dir>\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps\rtmBrowser\rm\common\js directory and open the file doc-editable.js with a text editor (e.g. Notepad).
2. Locate the **tinyMCE.init** function call.
3. In the **plugins** section, add tiny\_mce\_wiris to the existing collection if it does not exist (see sample code below).
4. In the **toolbar** section, add tiny\_mce\_wiris\_formulaEditor to the existing collection if it does not exist (see sample code below).
5. Save the file.

#### Sample Code:

```
plugins: [
```

```
 "saveinline image searchreplace print paste fullscreen advlist
 lists",
```

```
 "noneditable autoresize code textcolor linkext charmap mxgraph" +
 (rtmDdInitData.glossaryEnabled ? " glossary" : "") + (addTablePlugin ? "
 table" : "") + " tiny_mce_wiris",
```

```
 "colorpicker pagebreak fields"
```

```
],
```

```
toolbar: [
```

```
 "(!isNewObject ? "save cancel | " : "") + "bold italic forecolor
 backcolor fontselect fontsize select "
```

```
 + "alignleft aligncenter alignright alignjustify | bullist numlist
 outdent indent | openlink "
```

```
 + "link unlink image fullscreen qpimage mxgraph | addcaption
 addreference "
```

```
 + " tiny_mce_wiris_formulaEditor"
```

```
 + (rtmDdInitData.glossaryEnabled ? " | glossary" : "")
```

```
 + " fields splitText | close",
```

```
],
```

### Configuring the Editable Grid

The following steps describe how to configure the WIRIS editor for the editable grid, which can be used in Quick Search, reports and documents.

**To configure the WIRIS editor for the editable grid, do the following:**

- 1 Navigate to the <RM Install Dir>\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps\rtmBrowser\rm\ext\Us directory and open the file `TinyMceEditor.js` with a text editor (e.g. Notepad).
- 2 Locate the **tinyMCE.init** function call.
- 3 In the **plugins** section, add `tiny_mce_wiris` to the existing collection if it does not exist (see sample code below).
- 4 In the **toolbar** section, add `tiny_mce_wiris_formulaEditor` to the existing collection if it does not exist (see sample code below).
- 5 Save the file.

**Sample Code:**

```
plugins: [
 "table image searchreplace print paste fullscreen advlist lists",
 "noneditable autoresize code textcolor linkext charmap mxgraph
glossary tiny_mce_wiris",
 "colorpicker pagebreak close saveinline"
],
toolbar: [
 "undo redo | styleselect | bold italic forecolor backcolor fontselect
fontsize select | alignleft aligncenter alignright alignjustify | bullist
numlist outdent indent | link unlink image fullscreen qimage mxgraph"
+ " tiny_mce_wiris_formulaEditor"
+ (window.suppressGlossarySupport ? "" : " | glossary | close")
],
```

## GitHub Integration

Dimensions RM offers integration to both GitHub and GitLab services.

After configuring the Server URL and your personal access token, use Test Connection to verify integration. Once connected, choose the classes to be managed.

From the dropdown labeled Integrated Classes, select each class for which data is to be managed. Once selected, the class is listed with a check mark. To remove a class from the list, remove the check mark.

For this and all client server communications, we recommend using TLS.

**Integration**

GitHub

GitLab

Aviator

Server URL:

Personal Access Token:

Repository:  /

Integrated:

Test Connection Save Close

**Figure 14-1. Github Integration Configuration**

**Integration**

GitHub

GitLab

Aviator

Server URL:

Personal Access Token:

Repository:  /

Integrated Classes:

Test Connection Save Close

**Figure 14-2. GitLab Integration Configuration**

## Chatbot Integration

The Rasa chatbot allows users to ask questions in natural language and receive instructions how to complete their tasks.

This section contains the following:

["Chatbot Installation" on page 684](#)

["Docker Image Installation" on page 684](#)

["Configuring the Chatbot" on page 685](#)

For integrating the Rasa chatbot with Dimensions RM, you can choose to install manually (["Chatbot Installation" on page 684](#)) or by using a Docker image (["Docker Image Installation" on page 684](#)).

The Rasa chatbot can be installed on a separate server, or on the same server as Dimensions RM.

## Chatbot Installation

### Before you continue

The following steps assume that you have installed the Rasa chatbot on your Dimensions RM server. For further details on how to install the chatbot, see

<https://rasa.com/docs/rasa/2.x/installation>.

### To install the chatbot, execute these steps:

- 1 Install the Rasa server following the official installation instructions at <https://rasa.com/docs/rasa/2.x/installation>.
- 2 Unarchive the ChatBot.zip file to your preferred location, e.g. *C:\temp*. The ChatBot.zip file contains chatbot models to be used with Dimensions RM and can be found on your Dimensions RM server under *RM\_INSTALL\RM\tutorial\ChatBot*, e.g. *C:\Program Files\Open Text\Dimensions 25.2\RM\tutorial\ChatBot*.
- 3 Open a command prompt and change to the directory to which you unarchived the ChatBot.zip file, e.g. *C:\temp*.
- 4 Type the following command and press **Enter**: `notepad endpoints.xml`.
- 5 Locate the following lines:  

```
action_endpoint:
 url: "http://<HOST>:<PORT>/rtmBrowser/rest/rasa/webhook"
```
- 6 Change the marked sections to match your environment:
  - **http**: Change to **https** if you configured Tomcat to use secure connections.
  - **<HOST>**: Change to your server name or to the IP address of your Tomcat installation.
  - **<PORT>**: Change to the port of your Tomcat installation.
- 7 Save the file and close Notepad.
- 8 Type the following command and press **Enter**:  

```
rasa run --enable-api --cors "*" --port 5005
```

Change the port number as desired.

Remember to **take a note** of the port number, because you will need during the configuration.
- 9 Continue with the steps described in chapter ["Configuring the Chatbot" on page 685](#).

## Docker Image Installation

### Before you continue

You must insure that the following is installed:

- Docker
- docker-compose



**To install the chatbot, execute these steps:**

- 1 Extract the contents of ChatBot.zip to your preferred location, e.g. *C:\temp*. The ChatBot.zip file contains chatbot models to be used with Dimensions RM and can be found on your Dimensions RM server under *RM\_INSTALL\RM\tutorial\ChatBot*, e.g. *C:\Program Files\Open Text\Dimensions 25.2\RM\tutorial\ChatBot*
- 2 Open a command prompt and change to the directory to which you unarchived the ChatBot.zip file, e.g. *C:\temp*.
- 3 Type the following command and press **Enter**: `notepad endpoints.yml`.
- 4 Locate the following lines:  

```
action_endpoint:
 url: "http://192.168.2.17:8080/rtmBrowser/rest/rasa/webhook"
```
- 5 Change the marked sections to match your environment:
  - **http**: Change to **https** if you configured Tomcat to use secure connections.
  - **192.168.2.17**: Change to your server name or to the IP address of your Tomcat installation.
  - **8080**: Change to the port of your Tomcat installation.
- 6 Save the file and close Notepad.
- 7 By default, the chatbot has been configured to use port 5005. If you want to change the port, do the following:
  - a Type the following command and press **Enter**: `notepad docker-compose.yml`.
  - b Locate the following lines:  

```
ports:
- 5005:5005
```
  - c Change the marked number to the desired port number, e.g. `- 5005:6006`  
 Remember to **take a note** of the port number, because you will need during the configuration.
  - d Save the file and close Notepad.
- 8 Type the following command and press **Enter**:  
`docker docker-compose up -d`
- 9 Continue with the steps described in section ["Configuring the Chatbot" on page 685](#).

## Configuring the Chatbot

**Before you continue**

You must insure that the chatbot is installed either by executing the steps from chapter ["Chatbot Installation" on page 684](#), or from chapter ["Docker Image Installation" on page 684](#).

**To configure the chatbot, execute these steps:**

- 1 Stop Services:
  - a **Dimensions RM Common Tomcat**
  - b **Dimensions RM Pool Manager**
- 2 In Windows Explorer, navigate to *RM\_INSTALL\RM\conf*, e.g. *C:\Program Files\Open Text\Dimensions 25.2\RM\conf*.
- 3 Open the file *chatbot.properties* with Notepad or another plain text editor.
- 4 For the enabled setting, change the value to **true**, so the line reads *enabled=true*.
- 5 For the host setting, change the value to your server name or IP address your Rasa server is running on, e.g. *host=myrasaserver*.
- 6 If you changed the port during the installation, change the value for the port setting to the new port, e.g. *port=6006*.
- 7 Save the file.
- 8 Start Services:
  - a **Dimensions RM Common Tomcat**
  - b **Dimensions RM Pool Manager**

## Jira Integration

The Dimensions RM / Jira Integration is implemented using Open Text MF Connect.

MF Connect is a data synchronization technology providing data and relationship synchronization between products across the software development / DevOps lifecycle.

Instructions for using MF Connect can be found at:

<http://admhelp.microfocus.com/connect/>

In conjunction with the MF Connect implementation and installation guidelines, the following is a sample Data Source files from an existing RM / Jira integration:

| PROPERTIES                                                                                                            |                               | TYPES | RELATIONSHIPS |
|-----------------------------------------------------------------------------------------------------------------------|-------------------------------|-------|---------------|
| <div>  Cancel            Save            Save/Clear Water Marks            Next            View ReadMe         </div> |                               |       |               |
| Property                                                                                                              | Value                         |       |               |
| URL                                                                                                                   | https://dimrm.atlassian.net/  |       |               |
| Authorization Mechanism                                                                                               | User And Password (no OAuth2) |       |               |
| HTTPTimeout, millis                                                                                                   | 300000                        |       |               |
| Inject Comment Header Into Comm...                                                                                    | true                          |       |               |
| User Name                                                                                                             | qa.julia.combs@gmail.com      |       |               |
| Password                                                                                                              | *****                         |       |               |
| Disable Use of Authentication Cooki...                                                                                | false                         |       |               |
| Sample Project Key with Name                                                                                          | KAN:My Kanban Project         |       |               |
| Sample Project with Board                                                                                             | KAN:KAN board                 |       |               |
| Default Link Type                                                                                                     | blocks                        |       |               |
| Types (leave blank for all)                                                                                           |                               |       |               |
| Force Properties to be Writable (<ty...                                                                               |                               |       |               |
| Use Wiki to Store Rich Text                                                                                           | true                          |       |               |
| Disable Optimized Field Fetch                                                                                         | true                          |       |               |
| Time tracking precision                                                                                               | Minute                        |       |               |
| Include comments since date (yyyy-...                                                                                 |                               |       |               |

**Figure 14-3. Sample Jira Data Source**

## IP Restrictions for Groups

Restricting logins to originate from certain IP addresses is a security feature that makes attacks on the Dimensions RM more difficult. For using this feature, you have to send SQL commands to the server.



### NOTE

#### Oracle:

- All SQL examples will use SQLPlus
- SQL commands always end with a semicolon

**MS SQL Server:** All SQL examples will use SQL Server Management Studio

**IPv6:** IPv6 is supported. Note that IPv6 addresses are case sensitive.

**The following procedure should be Executed:**

- 1 Retrieve group information (see chapter ["Retrieving Group Information" on page 688](#)). Query shows group ID, group name and if the IP restrictions have been enabled for that group.  
If the FILTER\_BY\_IP attribute has a value of 0, restrictions are disabled.  
If the FILTER\_BY\_IP attribute has a value of 1, restrictions are enabled.
- 2 Enable IP restrictions for group if check showed it is not enabled (see chapter ["Enabling IP Restrictions" on page 688](#))
- 3 Restrict groups by IP addresses (see chapter ["Restricting Groups by IP Addresses" on page 690](#))

In addition, this section includes assistance with:

["Disabling IP Restrictions" on page 689](#)

["Retrieving IP Addresses of Logged In Users" on page 691](#)

## Retrieving Group Information

### Retrieving Group Information with Oracle

- 1 Open a command prompt.
- 2 Type sqlplus and press **Enter**.
- 3 Login with user icadmin for your database, e.g. icadmin@rtm.
- 4 Type the password for the ICADMIN user and press **Enter**. Note that SQLPlus does not show any characters for that password.
- 5 Type the following command and press **Enter**:  
`select GROUP_ID, NAME, FILTER_BY_IP from adm_groups order by NAME;`

### Retrieving Group Information with MS SQL Server

- 1 Start **MS SQL Server Management Studio**.
- 2 Select your server instance.
- 3 Login with user sa.
- 4 Type the password for the sa user and click **Connect**.
- 5 Click **New Query**. This opens a new SQL query sheet.
- 6 Type the following command:  
`select GROUP_ID, NAME, FILTER_BY_IP from  
<DATABASE>.ICADMIN.adm_groups order by NAME`
- 7 Click **Execute**.

## Enabling IP Restrictions

### Enabling IP Restrictions with Oracle

- 1 Open a command prompt.

- 2 Type `sqlplus` and press **Enter**.
- 3 Login with user `icadmin` for your database, e.g. `icadmin@rtm`.
- 4 Type the password for the ICADMIN user and press **Enter**. Note that SQLPlus does not show any characters for that password.
- 5 Type the following command and press **Enter**:  
`update adm_groups set FILTER_BY_IP=1 where GROUP_ID=<GROUP_ID>;`

**NOTE**

Replace `<GROUP_ID>` with the actual group ID (which you retrieved in chapter ["Retrieving Group Information" on page 688](#)).

### Enabling IP Restrictions with MS SQL Server

- 1 Start **MS SQL Server Management Studio**.
- 2 Select your server instance.
- 3 Login with user `sa`.
- 4 Type the password for the `sa` user and click **Connect**.
- 5 Click **New Query**. This opens a new SQL query sheet.
- 6 Type the following command:  
`update <DATABASE>.ICADMIN.adm_groups set FILTER_BY_IP=1 where GROUP_ID=<GROUP_ID>`

**NOTE**

- Replace `<DATABASE>` with the actual database, e.g. `RTM`
- Replace `<GROUP_ID>` with the actual group ID (which you retrieved in chapter ["Retrieving Group Information with MS SQL Server" on page 688](#))

- 7 Click **Execute**.

## Disabling IP Restrictions

### Disabling IP Restrictions with Oracle

- 1 Open a command prompt.
- 2 Type `sqlplus` and press **Enter**.
- 3 Login with user `icadmin` for your database, e.g. `icadmin@rtm`.
- 4 Type the password for the ICADMIN user and press **Enter**. Note that SQLPlus does not show any characters for that password.

- 5 Type the following command and press **Enter**:  
`update adm_groups set FILTER_BY_IP=0 where GROUP_ID=<GROUP_ID>;`



#### NOTE

Replace `<GROUP_ID>` with the actual group ID (which you retrieved in chapter "Retrieving Group Information with Oracle" on page 688).

### Disabling IP Restrictions with MS SQL Server

- 1 Start **MS SQL Server Management Studio**.
- 2 Select your server instance.
- 3 Login with user `sa`.
- 4 Type the password for the `sa` user and click **Connect**.
- 5 Click **New Query**. This opens a new SQL query sheet.
- 6 Type the following command:  
`update <DATABASE>.ICADMIN.adm_groups set FILTER_BY_IP=0 where GROUP_ID=<GROUP_ID>`



#### NOTE

- Replace `<DATABASE>` with the actual database, e.g. `RTM`
- Replace `<GROUP_ID>` with the actual group ID (which you retrieved in chapter "Retrieving Group Information with MS SQL Server" on page 688)

- 7 Click **Execute**.

## Restricting Groups by IP Addresses

### Restricting Groups by IP Addresses with Oracle

- 1 Open a command prompt.
- 2 Type `sqlplus` and press **Enter**.
- 3 Login with user `icadmin` for your database, e.g. `icadmin@rtm`.
- 4 Type the password for the `ICADMIN` user and press **Enter**. Note that SQLPlus does not show any characters for that password.

- 5 Type the following command and press **Enter**:  

```
insert into adm_groups_ip(GROUP_ID, IP_ADDRESS)
VALUES (<GROUP_ID>, '<IP_ADDRESS>');
```

**NOTE**

- Replace **<GROUP\_ID>** with the actual group ID (which you retrieved in chapter ["Retrieving Group Information with Oracle" on page 688](#))
- Replace **<IP\_ADDRESS>** with the IP address which you want to allow access

**Restricting Groups by IP Addresses with MS SQL Server**

- 1 Start **MS SQL Server Management Studio**.
- 2 Select your server instance.
- 3 Login with user sa.
- 4 Type the password for the sa user and click **Connect**.
- 5 Click **New Query**. This opens a new SQL query sheet.
- 6 Type the following command:  

```
insert into <DATABASE>.ICADMIN.adm_groups_ip(GROUP_ID, IP_ADDRESS)
VALUES (<GROUP_ID>, '<IP_ADDRESS>')
```

**NOTE**

**Replace** **<DATABASE>** with the actual database, e.g. RTM

**Replace** **<GROUP\_ID>** with the actual group ID (which you retrieved in chapter ["Retrieving Group Information with MS SQL Server" on page 688](#))

**Replace** **<IP\_ADDRESS>** with the IP address which you want to allow access

**Retrieving IP Addresses of Logged In Users**

The following steps describe how to retrieve the IP addresses of logged in users. This allows you to verify the groups of those users and add there IP addresses as described in chapter ["Restricting Groups by IP Addresses" on page 690](#).

**Retrieving IP Addresses of Logged In Users with Oracle**

- 1 Open a command prompt.
- 2 Type sqlplus and press **Enter**.
- 3 Login with user <RM\_INSTANCE> for your database, e.g. rmdemo@rtm.
- 4 Type the password for the RM instance and press **Enter**. Note that SQLPlus does not show any characters for that password.

- 5 Type the following command and press **Enter**:  
`select USER_NAME, LOCATION, LAST_ACTIVE_TIME from user_sessions  
order by USER_NAME, LAST_ACTIVE_TIME DESC;`

#### Retrieving IP Addresses of Logged In Users with MS SQL Server

- 1 Start **MS SQL Server Management Studio**.
- 2 Select your server instance.
- 3 Login with user sa.
- 4 Type the password for the sa user and click **Connect**.
- 5 Click **New Query**. This opens a new SQL query sheet.
- 6 Type the following command:  
`select USER_NAME, LOCATION, LAST_ACTIVE_TIME from  
<DATABASE>. <RM_INSTANCE>.user_sessions order by USER_NAME,  
LAST_ACTIVE_TIME DESC`



#### NOTE

**Replace** <DATABASE> with the actual database, e.g. RTM

**Replace** <RM\_INSTANCE> with name of your Dimensions RM instance.



# Specifying a URL for URL Addressable Views

To copy a URL to the clipboard:

["Copying the URL of a Requirement to the Clipboard" on page 111](#)

["Copying the URL of a Document to the Clipboard" on page 226](#)

["Copying the URL of a Report to the Clipboard" on page 355](#)

To manually specify a URL or to use a script or program to invoke it, refer to the following.



## **NOTE If the Object Name Contains Spaces**

If an object name includes a space character, replace the space with: %20

## URL to a Document

```
http://ServerName/rtmBrowser/
app?goto=doc&db=DataBaseName&proj=InstanceName&doc=DocumentName
```

## URL to a Chapter of a Document

```
http://ServerName/rtmBrowser/
app?goto=doc&db=DataBaseName&proj=InstanceName&doc=DocumentName&class=Chapter&o=ChapterID
```

## URL to a Chapter, Requirement of a Document

```
http://ServerName/rtmBrowser/
app?goto=doc&db=DataBaseName&proj=InstanceName&docID=19&c=1&puid=MRKT_000040
```

## URL to a Snapshot of a Document

```
http://ServerName/rtmBrowser/
?goto=doc&db=DataBaseName&proj=InstanceName&doc=SnapshotName
```

## URL to Export a Document

```
http://ServerName/rtmBrowser/cgi-bin/
rtmBrowser.exe?&goto=publishdoc&db=DataBaseName&proj=InstanceName&docID=DocumentID&ic__saveAsOptions=doc
```

## URL to a Collection

```
http://ServerName/rtmBrowser/
?goto=collection&db=DataBaseName&proj=InstanceName&collection=Colle
ctionName
```

After pasting the URL into a file or application, you can also add parameters to it, which allows additional features. If you do not supply run-time parameters in the URL, you can specify them when running the report.

| Function       | Description                                                                                                                                                                                 | Example URL                                                                                                                                                                                            |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Editable Grid  | By default, the requirements of collection or baseline are shown in a normal table. To use an editable grid instead, add <b>&amp;editableGrid=true</b> to the URL.                          | <code>http://<br/>myserver:8080/<br/>rtmBrowser/cgi-bin/<br/>rtmBrowser.exe?goto<br/>=collection&amp;db=ORCL<br/>&amp;proj=RMDEMO&amp;collec<br/>tion=CollectionName<br/>&amp;editableGrid=true</code> |
| Hide Title Bar | By default, the collection or baseline shows a title bar with information about database, instance and path to the report. To hide the title, add <b>&amp;hideTitleBar=true</b> to the URL. | <code>http://<br/>myserver:8080/<br/>rtmBrowser/cgi-bin/<br/>rtmBrowser.exe?goto<br/>=collection&amp;db=ORCL<br/>&amp;proj=RMDEMO&amp;collec<br/>tion=CollectionName<br/>&amp;hideTitleBar=true</code> |

## URL to a Specific Version of a Requirement

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Re
quirement'sPUID&ver=VersionNumber r
```



### NOTE

If no version is specified, it will default to 1.

## URL to compare History Versions of a Requirement

### ***Compare Requirement by Object Ids***

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&o=Objec
tID1&comparewithID=ObjectID2
```

### ***Compare Current Requirement with Object Id***

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Re
quirement'sPUID&comparewithID=ObjectID
```

### ***Compare Requirement by Object Id and Version***

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&o=Objec
tID&comparewith=Version
```

### ***Compare Two Versions of a Requirement***

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Re
quirement'sPUID&ver=Version1&comparewith=Version2
```

### ***Compare Current Requirement with a Version***

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Re
quirement'sPUID&comparewith=Version
```

### ***Specifying User Name and Password on an URL***

For requirements, reports, collections, documents, snapshots, and to export documents, you can specify user name and password as part of the URL. This automatically logs you

in and opens the requested item. Note that for login you also need to specify database name and instance name.

| Option | Description  | Example  |
|--------|--------------|----------|
| u=     | RM user name | u=ephoto |
| pwd=   | RM password  | pwd=rtm  |

## URL to the Current Version of a Requirement

```
http://ServerName/rtmBrowser/
?d=DataBaseName&p=InstanceName&f=2&c=ClassID&id=Requirement'sPUID&u
=UserName&pwd=Password
```



### NOTE

This type of URL uses an older syntax that is different from the others. See the table below for more details on the options available in this syntax.

| Option | Description                                                                                                                                                                                                        | Example  |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| d=     | Oracle database that RM uses                                                                                                                                                                                       | d=RTM    |
| pid=   | RM instance ID number. You can specify pid= or p=, but not both (see "p=" below)                                                                                                                                   | pid=2    |
| p=     | RM instance name. You can specify pid= or p=, but not both (see "pid=" above)                                                                                                                                      | p=RMDEMO |
| f=     | RM Action to perform. <ul style="list-style-type: none"> <li>■ f=2: Opens an object for viewing.</li> <li>■ f=4: Opens an edit dialog for the specified object.</li> <li>■ f=5: Opens the RM Home page.</li> </ul> | f=2      |
| c=     | RM Class ID (this is a numeric value).                                                                                                                                                                             | c=7      |
| o=     | RM Object ID (this is a numeric value).                                                                                                                                                                            | o=21     |
| u=     | RM user name                                                                                                                                                                                                       | u=ephoto |
| pwd=   | RM password                                                                                                                                                                                                        | pwd=rtm  |

# SSO and CAC Configuration

The Single Sign On (SSO) option in the Dimensions RM installer installs components needed for the RM server to communicate with a Micro Focus SSO server, an optional part of a Dimensions CM or SBM installation.

For information about installing and configuring the Open Text SSO server, see the Dimensions CM or SBM documentation.

## Configuring SSL Certificates

You must create and configure SSL certificates to ensure security. See the Dimensions CM or SBM documentation for general information on the creation and configuration of SSL certificates for Open Text SSO.



### NOTE

For initial setup and testing, demonstration certificates are included in the installation. These are not intended for production use and should be replaced with your own certificates. See the Dimensions CM or SBM documentation.

- Create a certificate for the RM server (RM\_CERT). Configure the STS server to trust this certificate. The certificate can be either self-signed or signed by a certificate authority (CA\_RM\_CERT).



### NOTE

To communicate with the Open Text SSO server (STS server), your RM Server and fat client systems must include a copy of the STS server certificate.

See ["Exporting a Certificate from IIS" on page 697](#), ["Exporting a Certificate from the STS Server" on page 698](#) and ["Adding a Certificate for RM Server to the STS Keystore" on page 698](#).

- Create a certificate for the RM web server (RM\_WEB\_CERT). To enable SSO with remote fat clients, the RM web server should be configured for SSL and the certificate should be signed by a known certificate authority.

### Exporting a Certificate from IIS

When you have configured the RM Web Server to use an SSL certificate (which you should do before production use), then you must configure the Admin clients to use the same CA certificate as was used for the RM Web Server. The CA certificate must be in PEM format.

The following example procedure shows how to export a CA certificate from IIS server.

Dimensions RM includes its own Tomcat web server. Apache and IIS are not required, although organizations can choose to operate a third-party web server in addition to the **Dimensions RM Common Tomcat** web server.

- 1 Retrieve the certificate in CER format by following the steps in chapter "Exporting Certificates to CER Format from IIS" on page 833.
- 2 Use the openssl tool to convert the file to PEM format as in this example:  

```
openssl x509 -in exported_certificate.cer -out
certificate_for_rm.pem -inform DER -outform PEM
```

**NOTE**

- Do not use a self-signed certificate on the RM Web Server.
- You can obtain an openssl binary from <http://www.openssl.org/>

### Exporting a Certificate from the STS Server

After you have configured the Dimensions CM or SBM STS server with your own SSL certificates (rather than the demo certificates it may have shipped with), you must export a certificate from the STS server and then copy it to the RM Server.

**To export the STS certificate from the STS server, do the following:**

- 1 Execute the steps described in chapter "Exporting a Certificate from the STS Server from the Command Prompt" on page 837 or "Exporting the STS Certificate from SBM Configurator" on page 838.

**IMPORTANT!**

Ensure that you retrieve the certificate in **PEM** format.

- 2 Copy the resulting *sts.pem* file to *RM\_Install\RM\conf* (e.g. *C:\Program Files\Open Text\Dimensions 25.2\RM\conf*). Verify that the value of the registry key *SSO\_TRUST\_CERTIFICATE* matches the actual location of the file. See "RM Server Parameters" on page 704.

### Adding a Certificate for RM Server to the STS Keystore

The RM server certificate has to be added to a configured truststore (the default file name is *truststore.jks*).

**To add the RM Server certificate to the STS keystore, do the following:**

- 1 Execute the steps described in chapter "Exporting Certificates to CER Format from the Management Console" on page 832 or "Exporting Certificates to CER Format from IIS" on page 833.
- 2 Open a command prompt.
- 3 Type `keytool` and press **Enter**. If you receive the message that `keytool` is not recognized, type the following command and press **Enter**:  

```
set path=%path%;"<RM_Install>\Dimensions 25.2\Common Tools
2.5.0.0\jre\17.0\bin"
```

**NOTE**

Replace *RM\_Install* with the path to the [Product Name Short No Marks] directory, e.g., *C:\Program Files\Open Text\*

- 4 Navigate to the location of the truststore, which is at *SBM\_Install\Common\Tomcat x.x\server\default\webapps\idp\WEB-INF\conf*.
- 5 Type the following command (all on one line) and press **Enter**:  

```
keytool -import -trustcacerts
-keystore TruststoreName -storepass StorePassword
-alias Alias -file CerPath
```

**NOTE**

- Replace *TruststoreName* with the file name of the truststore. The default is *truststore.jks*. If the keystore name contains spaces, surround it with double quotes.
- Replace *StorePassword* with the password for the keystore. The default password for the cacerts keystore is: **changeit**
- Replace *Alias* with a unique name.  
Suggested aliases:
  - *rm\_ca* for a CA certificate.
  - *rmserver* for the RM server certificate.
- Replace *CerPath* with the full path to your certificate in CER format. If the path contains spaces, surround the path with double quotes.

The complete keytool command may look like this (all on one line):

```
keytool -import -trustcacerts -keystore truststore.jks
-alias rmserver -file "C:\My Certificates\MyCert.cer"
```

## Configuring SSO with AD FS

### Part 1: Initiate Configuration Using AD FS Management Application

This section of the configuration addresses the initial configuration using the Active Directory Federation Services (AD FS) Management Application.

- 1 Open the AD FS Management application
- 2 In the tree select Relying Party Trusts folder.

**3** In the Actions Pane select *Add Relying Party Trust*.



**4** Click 'Start'

**5** From 'Welcome to the Add Relying Party Trust' dialog:

- a** Select 'Claims Aware'
- b** Click 'Next'

**6** From 'Select Data Source' dialog:

- a** Select 'Enter data about the relying party manually'
- b** Click 'Next'

**7** From 'Specify Display Name' dialog:

- a** Enter 'Display Name' e.g., **RM Browser app**
- b** Click 'Next'

**8** From 'Configure URL' dialog:

- a** Check the box 'Enable support for the SAML 2.0 Web SSO protocol'
- b** Provide Relying party SAML 2.0 SSO service URL, e.g.,  
<https://localhost:8443/rtmBrowser/auth?saml2>
- c** Click 'Next'

**9** From 'Configure Identifiers' dialog:

- a** Provide Relying party trust identifiers, e.g.,  
<https://localhost:8443/rtmBrowser/>
- b** Click 'Add'
- c** Click 'Next'

**10** Choose Access Control Policy (e.g., Permit everyone), Click 'Next'

**11** From 'Finish', Click 'Close'

**12** Right mouse click on create 'Relying Party Trust',

- a** Select Properties
- b** Switch to the Endpoints tab
- c** Click **Add SAML** button (see "Select the relevant Outgoing claim type" on page 701)



- d Select Endpoint Type: SAML Logout
  - e Provide Trusted URL (adfs endpoint + /?wa=wsignout1.0 )
- 13** On the Relying Party Trusts dialog:
- a Select your application
  - b Select 'Edit Claim Issuance Policy' in the Actions Pane
  - c Click 'Add Rule'
- 14** On the 'Select Rule Template' dialog:
- a Under 'Claim Rule Template' select 'Transform an Incoming Claim'
  - b Click 'Next'
- 15** On the Configure Rule dialog (see ["Select the relevant Outgoing claim type" on page 701](#)):
- a Under 'Claim rule name'
  - b Enter the display name for this rule
  - c Select the relevant Incoming claim type
  - d Select the relevant Outgoing claim type

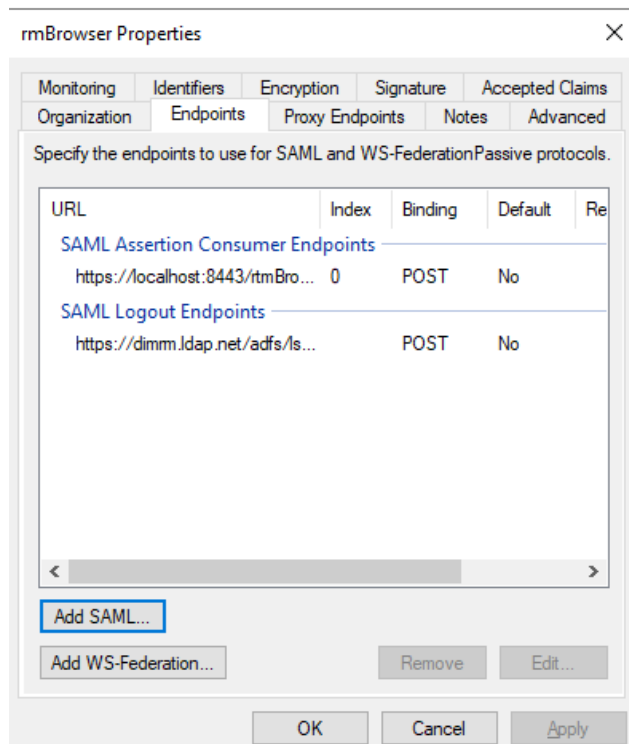


**Figure 14-4. Add SAML Dialog**

You can configure this rule to send the values of LDAP attributes as claims. Select an attribute store from which to extract LDAP attributes. Specify how the attributes will map to the outgoing claim types that will be issued from the rule.

Claim rule name:

Rule template: Send LDAP Attributes as Claims

Attribute store:

Mapping of LDAP attributes to outgoing claim types:

|   | LDAP Attribute (Select or type to add more) | Outgoing Claim Type (Select or type to add more) |
|---|---------------------------------------------|--------------------------------------------------|
| ▶ | User-Principal-Name                         | Name                                             |
| * |                                             |                                                  |

**Figure 14-5. Sample Rule**

## Part 2: Complete the Configuration in Dimensions RM

- 1 Stop Services:
  - a **Dimensions RM Common Tomcat**
  - a **Dimensions RM Pool Manager**
- 2 Copy *RM\_Install*\Common Tools #.#.#.#\tomcat\#.#\webapps\rtmBrowser\WEB-INF\web.xml to a backup - just to be safe.
- 3 Open *RM\_Install*\Common Tools #.#.#.#\tomcat\#.#\webapps\rtmBrowser\WEB-INF\web.xml with a text editor, e.g. Notepad.
- 4 Search for **SAML2 SSO Filter**
- 5 Modify as follows:
  - a Uncomment the filter section.
  - b Set enabled param-value to **true**
  - c Set audience to <https://localhost:8443/rtmBrowser/>
  - d Set Login to <https://dimrm ldap.net/adfs/ls/>

- e Set Logout to <https://dimrm ldap.net/adfs/ls/?wa=wsignout1.0>

**NOTE**

If the preference is that logout only logout from the Dimensions RM application, then the logout parameter value should be empty.

```
<param-name>logout</param-name>
<param-value></param-value>
```

- f Save web.xml
- 6** Execute RM Manage as administrator
- a Right click database name, choose Configure Login Sources
  - b Configure login sources, checking **RM** and **SAML SSO** (see "Configure SAML SSO Login" on page 703).
  - c Click the 'Settings' box
  - d Set Audience: <https://localhost:8443/rtmBrowser/>
  - e Set Issuer URL: <http://dimrm ldap.net/adfs/services/trust>
  - f Click OK

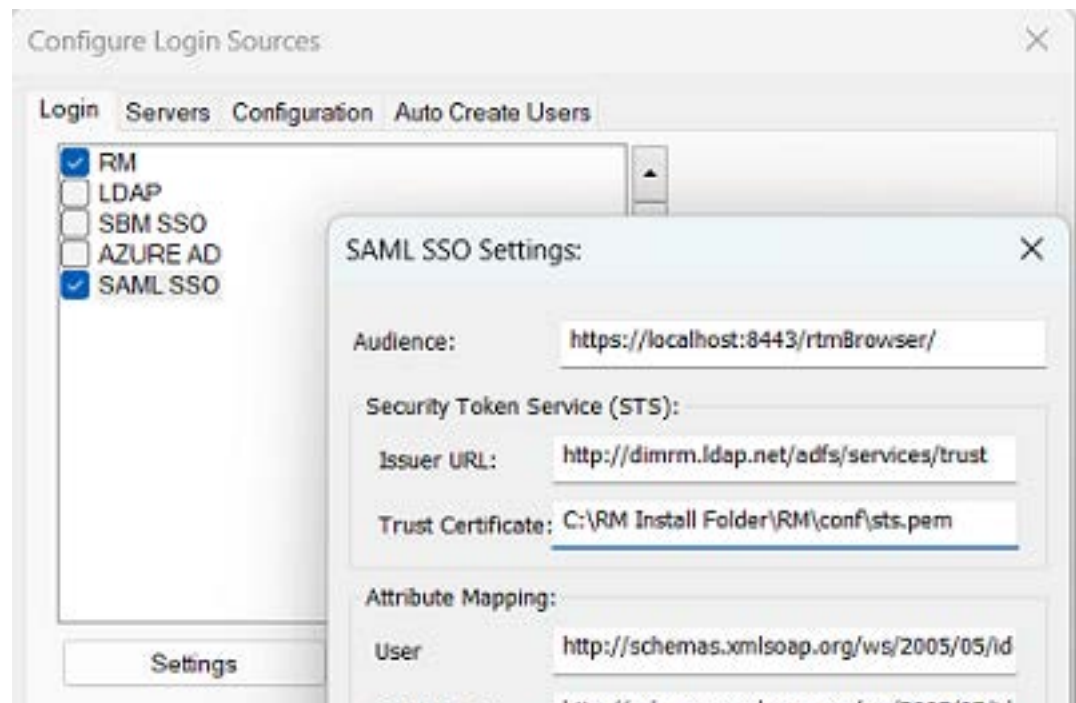


**Figure 14-6. Configure SAML SSO Login**

- 7** Select the 'Auto Create Users' tab on Configure Login Sources
- a Enable Auto Create
  - b Enter the name of the instance into which users will be created

- c Select the default Group and enable Assign to Categories
- 8** Export the Trust Certificate
  - a Export the certificate from the AD FS server in pem format
  - b Save it as sts.pem and copy it to RM\conf folder and name as sts.pem (see ["Configure SAML SSO Login" on page 703](#)).
- 9** **Terminate all running rmLicenseAgent.exe instances in Task Manager**
- 10** Re-start Services:
  - a **Dimensions RM Common Tomcat** Service
  - b **Dimensions RM Pool Manager**
- 11** Log into RM. You should be redirected to AD FS SSO and validated successfully.

## Registry Keys and Configuration Files on the RM Server

The following sections list the registry keys and configuration files located on the RM server system that are necessary to implement SSO. This may be of use in troubleshooting the configuration.

### RM Server Parameters

HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default

| RM Server Registry Keys   |                                                                                                                                                                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key                       | Description                                                                                                                                                                                                                                 |
| RMKey<br>(String)         | Contains a full path to a file with a private key of the RM server certificate. The Key file should not be password protected. The file must be in .pem format.<br>Example:<br>C:\Program Files\Open Text\Dimensions 25.2\RM\conf\rmkey.pem |
| RMCertificate<br>(String) | Contains a full path to a file for a certificate of the RM server. The file must be in .pem format.<br>Example:<br>C:\Program Files\Open Text\Dimensions 25.2\RM\conf\rmcert.pem                                                            |
| SSOServer<br>(String)     | Contains the URL to the SSO/STS server. Only the host name and port are required.<br>Example:<br>http://ssohost:8085                                                                                                                        |
| STSServer<br>(String)     | Contains the URL to the STS server if it is installed separately.<br>This is optional and is not needed when SSO is provided by SBM only.                                                                                                   |

| RM Server Registry Keys |                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SSO_TRUST_CERTIFICATE   | Contains the full path to the STS server certificate.<br>Example:<br>C:\Program Files\Open Text\Dimensions 25.2\RM\conf\sts.pem                                                                                                                                                                                                                                                                                                            |
| SSO_RELIVING_PARTY      | Should contain the SSO "Reliving Party" used to validate and request Token. For more information about this value, read the STS server configuration information<br><br>Contains a default value of:<br>uri:org:eclipse:alf:sso:relyingparty<br>:anonymous:anonymous:anonymous;uri<br>:org:eclipse:alf:sso:relyingparty<br>:serena.application.engine<br>:notification.server:anonymous<br>:anonymous                                      |
| SSO_CLOCK_TOLERANCE     | "Expiration Tolerance" time in sec, used to validate the STS Token. Sometimes clocks (server and relying party) are not perfectly aligned. A token might be issued say at 12:00:00 but the Relying Party might be 2-3 minutes behind so it is 11:57:00. In such a case, the token will be needlessly rejected. So we need to have a small (configurable) amount of time that allows for clock skew.<br><br>Value set by the installer: 300 |

### Gatekeeper Parameters

The Gatekeeper runs on the **Dimensions RM Common Tomcat** web server. Its parameters are contained in two configuration files located in the following directory (the beginning of the path varies depending on which Open Text product the Tomcat installation is from):

```
<RM_Install_Dir>\Dimensions 25.2\Common Tools
2.5.0.0\tomcat\10.1\alfssogatekeeper\conf
```



**IMPORTANT!** Ensure that the gatekeeper configuration specifies the same host names in Dimensions RM as in SBM or Dimensions CM. Specify host names rather than IP addresses, otherwise SSO may not work correctly with Web applications.

| gatekeeper-core-config.xml   |                                                                                                                                            |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Parameter                    | Description                                                                                                                                |
| SecurityTokenService         | URL to the STS server. This is configured by the installer.<br>Example:<br><code>http://sts-server:8085/TokenService/services/Trust</code> |
| SecurityTokenServiceExternal | Same as the SecurityTokenService.                                                                                                          |
| FederationServerURL          | URL to the Federation server. This is configured by the installer.<br>Example:<br><code>http://sts-server:8085/ALFSSOLogin/login</code>    |

| gatekeeper-services-config.xml                                                                                                                                |                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameter                                                                                                                                                     | Description                                                                                                                                     |
| Path:<br><GatekeeperProtectionControl><br><ProtectedURIs><br>Element:<br><URIMatcher requestURI="/rtmBrowser/*" />                                            | URIMatcher should have one line that contains "/rtmBrowser/*" string. This is a definition of a filter to protect a particular web application. |
| Path:<br><Service name="default" ProtectionLevel="all"><br><ServiceEntryPoints><br><BrowserRequests><br>Element:<br><URIMatcher requestURI="/rtmBrowser/*" /> | Protected URL mask.                                                                                                                             |

| gatekeeper-services-config.xml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Description                                                                                                                                                                              |
| Path:<br><GlobalLogoutURI><br>Element:<br><URIMatcher requestURI="*/<br>logout-sso.jsp" />                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The default logout URL to use with the sequence to invalidate SSO token. When accessing this URL, the Gatekeeper automatically rejects the SSO token causing the login screen to appear. |
| Path:<br><DMZ><br><BrowserRequests><br>Elements:<br><URIMatcher requestURI="/<br>rtmBrowser/css/*"/><br><URIMatcher requestURI="/<br>rtmBrowser/html/*"/><br><URIMatcher requestURI="/<br>rtmBrowser/images/*"/><br><URIMatcher requestURI="/<br>rtmBrowser/imagesnew/*"/><br><URIMatcher requestURI="/<br>rtmBrowser/jscript/*"/><br><URIMatcher requestURI="/<br>rtmBrowser/jscripts/*"/><br><URIMatcher requestURI="/<br>rtmBrowser/WebServices"/><br><URIMatcher requestURI="/<br>rtmBrowser/WebServices/<br>rtmService.wsdl"/><br><URIMatcher requestURI="/<br>rtmBrowser/Command"/> |                                                                                                                                                                                          |

## Registry Keys and Configuration Files on the Fat Client

The following lists the SSO-related registry keys and configuration files located on systems with a fat client installation. This may be of use in troubleshooting the configuration.

HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default

| RM Fat Client Registry Keys             |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key                                     | Description                                                                                                                                                                                                                                                                                                                                                                                          |
| RMKey<br>(String)<br>(Optional)         | Contains a full path to a file with a private key of the RM server certificate. The Key file should not be password protected. The file must be in .pem format.<br>Example:<br>C:\Program Files\Open Text\Dimensions 25.2\RM\conf\r<br>mkey.pem                                                                                                                                                      |
| RMCertificate<br>(String)<br>(Optional) | Contains a full path to a file for a certificate of the RM server. The file must be in .pem format.<br>Example:<br>C:\Program Files\Open Text\Dimensions 25.2\RM\conf\r<br>mcert.pem                                                                                                                                                                                                                 |
| SSOServer<br>(String)                   | Contains the URL to the Dimensions CM or SBM SSO/STS server. Only the host name and port are required.<br>Example:<br>http://ssohost:8085                                                                                                                                                                                                                                                            |
| RMServer<br>(String)                    | Contains the URL to the RM server.<br><br>Fat clients communicate with the RM server to request an SSO token. This registry key allows the use of non-standard ports. Remote fat clients must use HTTPS, so the URL must contain https for the protocol portion of the URL.<br><br>To use a specific port:<br>https://rmserverhost:8443<br>To use a the default HTTPS port:<br>https://rmserverhost3 |
| CAC<br>(String)<br>(Optional)           | If this key contains a non-empty value, CAC logins are "enforced". In such a case, a user can be validated as a "pure" RM local user or by using smart cards. If this key doesn't exist, a user can be validated with SSO using a username/password combination.                                                                                                                                     |
| CACertificate<br>(String)               | Contains the full path to a file with the CA_RM_WEB (a trusted issuer of the certificate) to validate the RM web server certificate. The file must be in .pem format.<br><br><b>NOTE</b> Connection to RM Web uses SSL only, therefore this setting is important.                                                                                                                                    |

## Troubleshooting

If SSO connections fail, this may be due to the following:

### 1 Certificate sts.pem mismatch

Update the certificate as described in chapter [Table , "Exporting a Certificate from the STS Server," on page 698](#).



**2 LDAP Server unavailable**

If you are using LDAP with SSO, check that the LDAP server is available. With SBM, you perform this check with the SBM Configurator.

## Redirecting Internal Web Service and REST Service Calls

When using a setup where an Apache server or Microsoft IIS is used in combination with Tomcat, HTTPS calls may not work or show poor performance. This can be resolved by redirecting those calls so that the Apache server or Microsoft IIS is not used.

**To redirect internal web service calls, do the following:**

- 1 Open Windows Registry editor (select **Run**, enter `regedit` and click **OK**).
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default.
- 3 Right-click the **Default** key and select **New | String Value** from the shortcut menu.
- 4 Specify the name `RM_INTERNAL_WS_URL` and press **Enter**.
- 5 Double-click the `RM_INTERNAL_WS_URL` value. This opens the **Edit String** dialog.
- 6 Enter the server URL into the **Value data** box, e.g. `http://localhost:8080/`  
If HTTP is not enabled, change the URL protocol to `https`.  
Change the port to match your Tomcat configuration.
- 7 Click **OK**.

**To redirect internal REST service calls, do the following:**

- 1 Open Windows Registry editor (select **Run**, enter `regedit` and click **OK**).
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default.
- 3 Right-click the **Default** key and select **New | String Value** from the shortcut menu.
- 4 Specify the name `RM_INTERNAL_REST_URL` and press **Enter**.
- 5 Double-click the `RM_INTERNAL_REST_URL` value. This opens the **Edit String** dialog.
- 6 Enter the server URL into the **Value data** box, e.g. `http://localhost:8080/`  
If HTTP is not enabled, change the URL protocol to `https`.  
Change the port to match your Tomcat configuration.
- 7 Click **OK**.



## Chapter 15

# System Administration

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# The Role of System Administrator

Members of the System Administrator group are responsible for functions that operate across the database and its environment. Membership in the System Administrator group must be granted through RM Manage (see ["Assigning Users to a Group" on page 512](#)).



## **IMPORTANT! Dimensions RM Installation folders.**

In order to maintain system security and prevent unauthorized software installation, only members of the System Administrator group should have read and write access to the **Dimensions RM Installation folders**.

We recommend the for all client server communications, the system administrator uses TLS to ensure sensitive information.

### ***System Administrator responsibilities include:***

- From RM Manage, the creation, modification, deletion and deployment of database instances.
- From RM Manage, the configuration of login sources and licensing.
- Functions and reporting accessed via the **Administrative Tools** menu accessed from the Administration menu in the RM UI.
- Configuration of special functions, tool integrations and solution extensions.

## Configuring RM Manage Workspace Options

This section discusses the Workspace Options that must be set in RM Manage for proper execution. Initial RM Manage settings are discussed in the Dimensions RM Installation Guide, as they are essential to getting RM up and running.

We understand that settings may change, this section provides detail concerning each of those settings and their content. Please review this section before setting or changing these options..

There are two administrator groups available for the definition of schema, process as well as the assignment of actions associated with administration:

- **System Administrator - Responsible for the RM Environment**
- **Instance Administrator - Responsible for one or more Instances**

RM Manage provides functionality to create and to configure the RM Database, to create instances, users, and to perform the general care and feeding of server and database for the organization.

Only users assigned the role of **System Administrators** have login access to **Dimensions RM Manage**.

New RM Users are created in the User Interface, see ["Managing Users" on page 506](#).

Assignment of a new or existing user to the **System Administrator** group may only be accomplished in RM Manage (see ["Assigning Users to a Group" on page 512](#)).

### **The Workspace Options**

The Workspace Options are stored in the Registry and, therefore, require that **RM Manage** must be **Run as Administrator** when settings are entered or modified.

#### **Mandatory Tab:**

- The RM Installation **Home Directory** ["RM Home Directory" on page 713](#).
- The **Oracle Home Directory**, required for Oracle Database users: ["Oracle Users Must Set ORACLE\\_HOME" on page 713](#)

#### **License Tab:**

- The RM License Server Settings ["Setting the License Server" on page 714](#).

#### **Security Tab:**

- The name and location of the Security.dat file: ["The Location of the Database Password File" on page 715](#).

### **RM Home Directory**



#### **CAUTION!**

If this value is not set properly, you cannot launch other Dimensions RM tools from RM Manage.

#### **To check or set the RM Home Directory:**

- 1 In **RM Manage**, select **Workspace | Options**.
- 2 Click the **Mandatory** tab.
- 3 In **RM Home Directory**, if currently incorrectly set, enter the location of Dimensions RM or browse to the Dimensions RM installation directory.  
e.g., C:\Program Files\Open Text\Dimensions 25.2\RM
- 4 Click **Apply**.

### **Oracle Users Must Set ORACLE\_HOME**

**When using RM with Oracle, ORACLE\_HOME** must be set to the Oracle installation directory. This value is stored in the registry and is used to determine the top-level installation directory of your company's Oracle RDBMS; this enables RM Manage to determine where the 'tnsnames.ora' file is located.



#### **CAUTION!**

If this value is not set properly, Oracle users not be able to see database instances that are not local to the machine you are using.

**To check or set the Oracle Home Directory in RM Manage:**

- 1 In **RM Manage**, select **Workspace | Options**.
- 2 Click the **Mandatory** tab.
- 3 In **Oracle Home Directory**: if incorrectly set, enter the location of the Oracle Home directory.
- 4 Click **Apply**.

**Setting the License Server**



**NOTE License Use**

**RM Manage** does not require a license for most functions:

In order to avoid licensing issues during setup, or at any time a License error is raised during the execution of RM Manage, please exit and run as administrator:

This also applies to the execution of class definition from the command line: bin\ClasDef.exe.

**To check or set the license server:**

- 1 **Right-click on RM Manage, and select Run as administrator from the context menu.**
- 2 In **RM Manage**, select **Workspace | Options**.
- 3 Select the **License** tab.
- 4 **License Tool:** Specifies which licensing application is used. Only **Open Text AutoPass Licensing** is supported.
- 5 **License Type:** Specifies which license type is used. The following license types are available:
  - **EVAL:** This license type indicates that Dimensions RM is running in evaluation mode.
  - **Named Users:** When selecting this license type, only named user licenses are requested. A named license is a license for a specific user. Other users cannot use that license. If a named license for this user is not available, login fails.
  - **Concurrent Users:** When selecting this license type, only concurrent user licenses are requested. Concurrent user licenses can be used by any user. If no concurrent license is available at the time of login, login fails.

- **Named or Concurrent Users:** When selecting this license type, the login process first tries to request a named user license. If this fails, a concurrent user license is requested. If this also fails, login fails. with a license error.



#### NOTE License Use

- If the organization has only named user licenses, select **Named Users** to reduce the waiting time. **Named or Concurrent Users** will send a second request (for a concurrent license) if a named license is not available.
- If the organization has only concurrent licenses, select **Concurrent Users** to reduce the waiting time. Choosing **Named or Concurrent Users** will always send two requests, as the first request for a named license will fail.

- 6 License Server:** Specifies the server on which the license tool runs. To change the server, type the name or IP address of the license server.
- 7 Limited Users:** Checking this box allows the Instance Administrator to add users with **Read Only Access** to any instance in the database. The setting for specific users will be available when a user is created or modified.  
  
Users may be added to existing groups and categories, but with read-only access to the data.  
  
The assignment of the limited license is standard: named or concurrent depending on the user assignment.
- 8** Click **Apply** to save changed license server settings.

### **The Location of the Database Password File**

The database password security file (`security.dat`) contains a security token and the encrypted database password for the database user ICADMIN.

If the default location of this file is changed, the location of the file location must also be changed as directed below..

#### **To check or change the location of the security.dat file:**

- 1 Right-click on RM Manage, and select Run as administrator from the context menu.**
- 2 In RM Manage, select Workspace | Options.**
- 3 Select the Security tab..**
- 4 In the Security File dialog box, if incorrectly set, type the full path to the security.dat file or browse to it. For example:**  
  
C:\Program Files\Open Text\Dimensions 25.2\RM\security.dat
- 5 Click OK.**

## RM Manage Toolbars

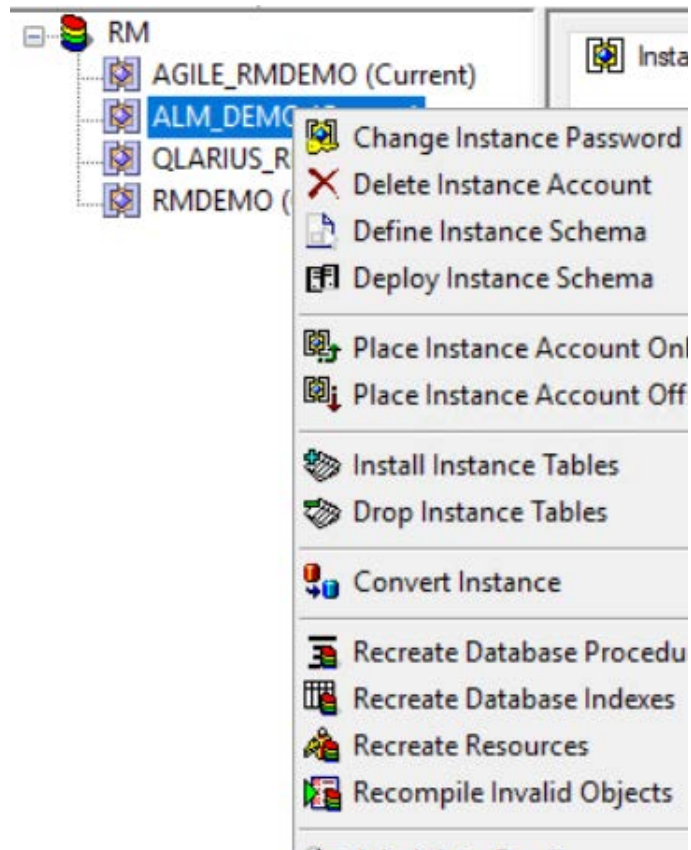
### Main Toolbar



The following table lists the buttons of the **Main** toolbar.

| Button | Action                    |
|--------|---------------------------|
|        | View instance information |
|        | View group information    |
|        | View information          |
|        | Show Help topics          |

**Instance Icons:** Highlight an instance, Select **File** or right-click the highlighted instance to list available functions.



## Functions Available from RM Manage

The following sections describe the functions available to the **System Administrator** in RM Manage.



Access to RM Manage is only available to members if the **System Administrator** group. However, many actions available from RM Manage are available to both the **Instance Administrator** and the **System Administrator** from the Administration menu in Dimensions RM User Interface.

Initial Configuration of Dimensions RM must be completed in RM Manage. RM Manage must also be used to:

**Create the ICDBA account** (see ["Creating the ICDBA Account" on page 717](#))

**Create new instances** (see ["Managing Instances" on page 719](#))

**Backup and restore instances** (see ["Dimensions RM Backup" on page 735](#), ["Restoring an Instance Account from a Backup" on page 742](#), ["Backing Up Instances from the Command Line" on page 749](#))

**Copying workflows to another class** (see ["Copying a Workflow to another Class" on page 817](#))

**Schema deployment to other servers** (see ["Deploying the Instance Schema" on page 813](#))

**Define new class types or Manage Class Types** (see ["Security" on page 812](#))

All other Actions, including Category definition and management, Group and User Management, and continued schema modification, may be executed from the UI by the Instance Administrator.

## Creating the ICDBA Account

The ICDBA account should be created once, in a database, and only once. The ICDBA account is used to execute all DBA functions. For details see ["Database Administrator Accounts" on page 761](#).

**To create the ICDBA account:**

- 1 In **RM Manage**, select the database in which you want to create the ICDBA account.
- 2 Select **File | Create ICDBA Account** or right-click the database and select **Create ICDBA Account**.
- 3 The **Create ICDBA account** dialog box opens.

- 4 In the **Password** field of the **Create ICDBA account** area, type the **case sensitive password** that you want to assign to the Dimensions RM ICDBA account.

- 5 In the associated **Confirm Password** field, re-type the password.
- 6 In the **Account Name** field of the **Enter SYSDBA account password** area, enter the appropriate system account to be used, for example, SYS or SA.
- 7 In the **Password** field, type the associated password for the account name.

## Oracle Tablespace

If Oracle is the database of choice, the ICDBA account is created, by default, in a new tablespace; its size is set to 1024 MB. To modify the size or create the ICDBA account in an existing tablespace, click the **Advanced** button. The dialog expands to display the advanced features.

**Create ICDBA account**

Create ICDBA account

Password: \*\*\*\*\*

Confirm Password: \*\*\*\*\*

Enter SYSDBA account password

Account Name: SYS

Password: \*\*\*

Buttons: Create, Cancel, Advanced <<

Tablespace option

☒ Create in new tablespace

☐ Create in existing tablespace

Administer Tablespaces...

| Tablespace Name | Size (MB) | Avail (MB) |
|-----------------|-----------|------------|
| ARF             | 512.00    | 511.94     |
| CAD             | 512.00    | 471.50     |
| QRM             | 512.00    | 455.44     |
| SYSAUX          | 500.00    | 107.94     |
| SYSTEM          | 650.00    | 106.00     |

Tablespace Size: 1024

Units: ☒ MBytes ☐ GBytes

- To set a different size, set the **Tablespace** and **Units** values as needed.
- To create the ICDBA account in an existing tablespace, select the **Create in existing tablespace** option, and select the tablespace from the list.
- If you wish to resize a tablespace or create a new one with a specific name, click the **Administer Tablespaces** button and complete the dialog as necessary.

## 8 Click **Create**.



### **IMPORTANT! Oracle Passwords**

Unless the default password expiration date has been re-configured, Oracle account passwords expire after 180 days. Change the ICDBA password before the elapsed time using the RM Manage **Change Administrator Password** menu item, see ["Database Administrator Accounts" on page 761](#).

## Managing Instances

An instance is a work area where information is created and maintained. The instance may be intended to manage a component, a product, or a family of products.



### **IMPORTANT! Database Instance Administrator**

When a database instance is created by the System Administrator, there are two database users created:

**Instance Name:** This is the database account.

**Administrator:** The **database instance** administrator account has access only to this instance, and only from RM Manage. The ID for this account is the instance name, with Admin appended, for example: MYINSTANCEAdmin

Historically, the administrator account was used to manage schema, groups and users for that instance. This functionality is now available in the UI.

Security requirements mandate that only individuals designated as System Administrators may access RM Manage directly.

### **For Dimensions RM Instance Names, the following conventions apply:**

#### **1 Allowed characters:**

Letters A-Z, a-z

Numbers

Underscore (\_)

Hyphen (-)

#### **2 Maximum length:** Up to 30 characters

Instance name must not be one of the reserved words (see ["Dimensions RM Reserved Words" on page 612](#)).

Additional Restrictions as specified for your database.

### Creating a New Instance:

The System Administrator is responsible for creating each new Instance.

**It is considered best practice** for the Instance Administrators to work together to define an instance schema that meets the general needs of the organization. This basis instance can be used by the System Administrator to create and populate each new instances for the various product teams.

Once created, the Instance Administrator will maintain all aspects of the schema.

- 1 To create a new Oracle Database Instance see ["Creating an Instance with Oracle Databases" on page 720](#) and, if relevant, ["Using Advanced Options When Creating a New Instance with Oracle Databases" on page 727](#).
- 2 To create a new instance using **MS SQL Server** see ["Creating a New Instance with MS SQL Server Databases" on page 728](#).
- 3 to create a new **PostgreSQL Database Instance** see ["Creating a New Instance with PostgreSQL Databases" on page 731](#).

**Once the new instance is created, please perform the following for all database types:**

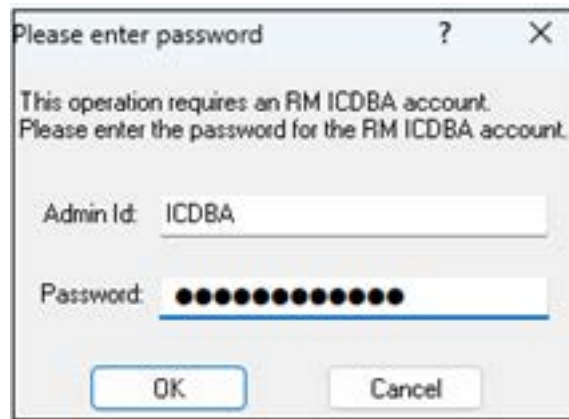
- ["Assigning Users to a Group" on page 512](#): in order to add at least one Instance Administrator(s) to the Administrator group for the new Instance.
- ["Setting Default Group Permissions" on page 514](#) in order to assign permissions to the Administrator group in this new instance.

## Creating an Instance with Oracle Databases

The System Administrator has the ability to create and delete instance accounts, backup and restore instances and administer user accounts.

### To create an instance:

- 1 In **RM Manage**, select the database in which you want to add the new instance.
- 2 Right-click the database and select **New Instance**.
- 3 The **Please enter password** dialog box opens. In the **Password** field, type the password for the Dimensions RM ICDBA account



- 4 The **Please Enter Instance Information** dialog box opens. Complete the following.

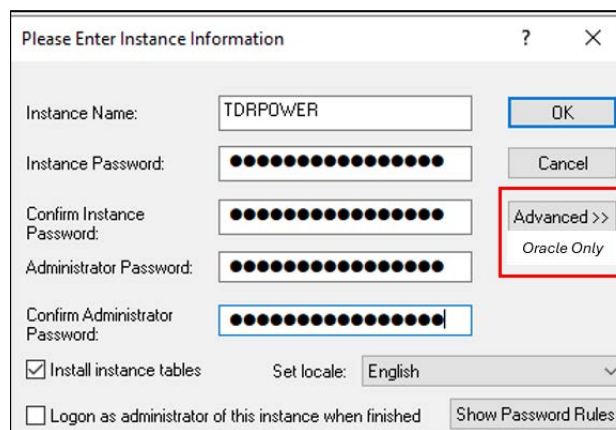


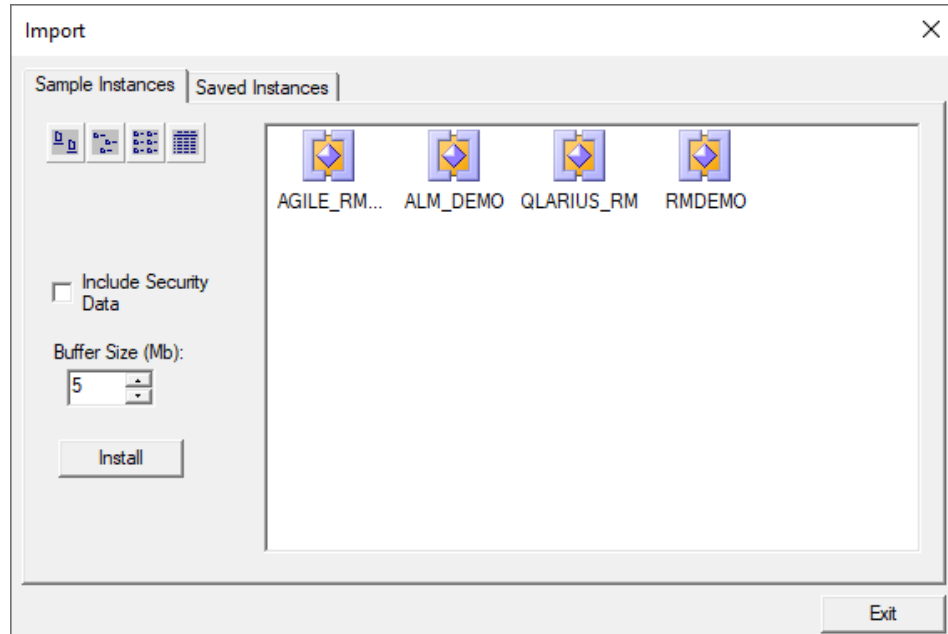
**Figure 15-1. Instance Creation Dialog**

| Instance Information Dialog    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field Name                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Instance Name                  | Enter an instance name (for example, <b>MYINSTANCE</b> ).<br><b>CAUTION!</b> The instance name must follow the conventions specified in Section <a href="#">"Naming Conventions for Instances"</a> on page 610                                                                                                                                                                                                                                                                                                                     |
| Instance Password              | Enter an instance password (e.g., XyzzyZZY.42). This password is used by Dimensions RM to access Oracle. It is not a login password.<br><b>CAUTION!</b> Instance passwords cannot begin with a number. For example, 12345 causes an error; however, a12345 is accepted. Click <b>Show Password Rules</b> for a summary of the rules.                                                                                                                                                                                               |
| Confirm Instance Password      | Re-enter the instance password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Administrator Password         | Enter a password for the Instance administrator account. This account has access only to this instance in RM Manage. The ID for this account is the instance name, with Admin appended, for example: MYINSTANCEAdmin<br><br>Historically, this account was used by the Instance Administrator to manage schema, groups and users in that instance. This functionality is now available in the UI, and security requirements have required that only individuals designated as System Administrators may access RM Manage directly. |
| Confirm Administrator Password | Re-enter the administrator password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Install instance tables        | <b>Selected:</b> When creating a new instance, the instance will be, initially, empty.<br><b>Cleared:</b> During the creation process, the Import dialog opens from which you can import a sample instance, a locally saved instance, or a backup.                                                                                                                                                                                                                                                                                 |

| Instance Information Dialog                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field Name                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Set Locale                                             | Set the Default Language for the Instance. This may be changed by individual users via User Settings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Logon as administrator of this instance when finished. | <p><b>Selected:</b> Current user will be logged in as the RM Manage Instance Admin (e.g., MyinstanceAdmin).</p> <p><b>Cleared:</b> Recommended, you will remain logged in as the System Administrator.</p> <p>In either case, you must assign at least one user with the role of <b>Instance Administrator</b> to this instance.</p> <p>If no users have been created, please create one or two - once the Instance Administrator is created and assigned, they can take care of user creation from the user interface.</p> <ul style="list-style-type: none"> <li>▪ <a href="#">"Creating a New User" on page 507</a></li> <li>▪ <a href="#">"Assigning Users to a Group" on page 512</a>: in order to add the Instance Administrator(s) to the Administrator group for the instance specified</li> <li>▪ <a href="#">"Setting Default Group Permissions" on page 514</a> in order to assign permissions to the Administrator group in this new instance.</li> </ul> |

- 5 Click **OK**. The create operation runs.
- 6 **Tablespace Error** dialog boxes may open during instance creation to indicate that particular tables are not large enough. If this occurs, do the following for each **Tablespace Error** dialog box:
  - a Read and take note of the error message in the dialog box. You will need to refer to the values recommended here later.
  - b Click **Yes**. A **Resize Tablespace** dialog box opens.
  - c Increase the value in the **New Datafile Size** field by at least the amount recommended in [Step a](#).
  - d Click **Resize**. A **Resize** dialog box opens.
  - e In the **Resize** dialog box, click **Yes**.
  - f In the **Resize Tablespace** dialog box, click **Close**.
- 7 A Success dialog appears. Click **OK**.
- 8 If the option **Install instance tables** was selected on the **Please Enter Instance Information** dialog, all further steps are omitted.

9 The **Import** dialog opens.



The **Import** dialog allows tables to be installed in the newly created instance. Do one of the following:

- **Do not install tables**—Click **Exit** without selecting any Instance files. You are done with this procedure. You can either remove the instance or install tables into it later.
- **Install a sample instance**—Select one of the sample instances from the **Sample Instances** tab:

| Instance     | Description                                                                                                                                                      |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ALM_DEMO     | This sample instance provides classes and data for software requirements management, creating ALM applications.                                                  |
| QLARIUS_RM   | This sample instance provides classes and data for an Insurance Company website and can be used in combination with the provided instance of Prototype Composer. |
| RMDemo       | This sample instance provides classes and data for requirement management projects.                                                                              |
| AGILE_RMDemo | This sample instance provides classes and data for requirement management projects in combination with Agile development.                                        |

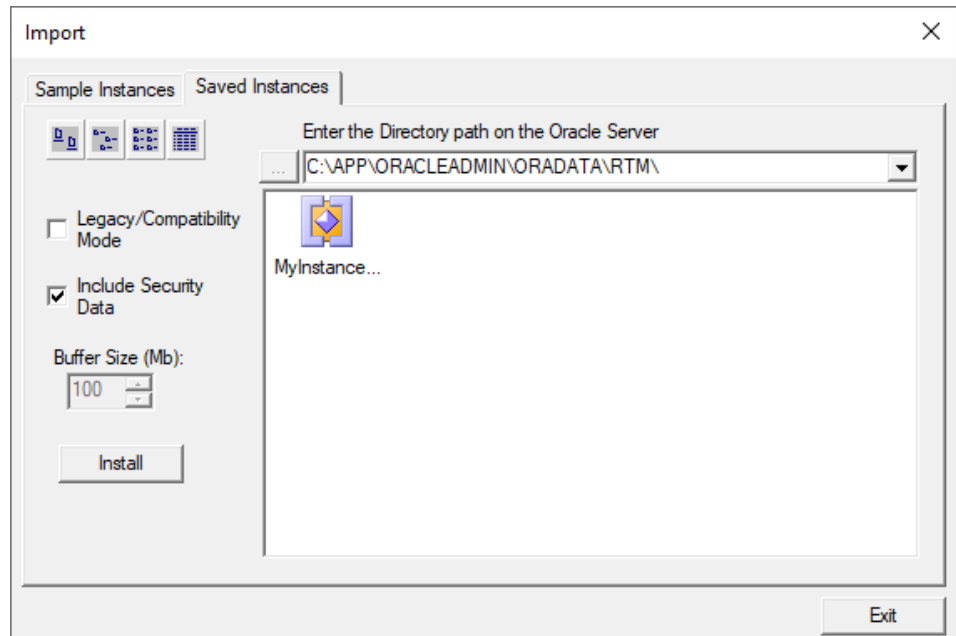


**CAUTION!**

Do NOT use any sample instance as a starting point for an actual production instance. They are useful for training, or for reproducing issues to be raised to support, but they carry a lot of history - better to start with a clean slate.



- **Install a saved instance or a backup** —Select the instance from the **Saved Instances** tab.



**NOTE** In Non-Legacy mode, you can only access backups that have been created with RM Manage. Backups copied to the server manually will not be available for selection.



**TIP**

- Instances displayed with an instance icon  contain data. Instances displayed with a class icon  contain only the instance schema.
- To view the modification date and size of the files, click the Details button .

- 10 Set the import options as needed:

| Import Dialog             |                                                                                                                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                     | Description                                                                                                                                                                                                             |
| Legacy/Compatibility Mode | <p><b>NOTE</b> Saved Instances tab only.</p> <p>Select this checkbox if you wish to import from a backup file that was created with RM 11.2.1 or older, or that was created in Legacy Mode with RM 11.2.2 or newer.</p> |
| Security Data             | Imports all the users in the backed up instance, as well as their permissions.                                                                                                                                          |
| Buffer Size               | <p><b>NOTE</b> Legacy Mode and Sample Instances tab only.</p> <p>This sets the temporary space available for the operation.</p>                                                                                         |

- 11 Click **Install**. The import operation runs.

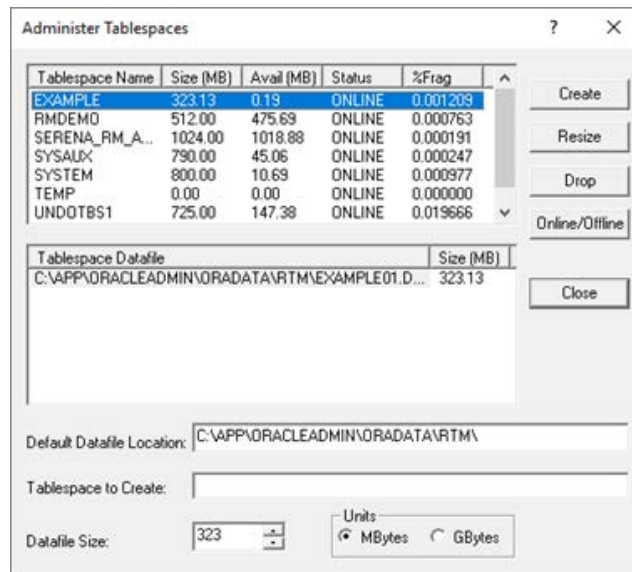
- 12** When prompted, click **Yes** to view a log of the import operation, or **No** to exit without looking at the log.

The log file is saved in the directory where the backup was created. It has the same name as the instance, but with a .log extension instead of a .dmp extension. It also includes the letters "Imp" and a time stamp based upon the restore operation, e.g. *InstanceName\_ExpDate\_ExpTime\_Imp\_ImpDate\_ImpTime.log*

See the Dimensions RM readme for information on possible Oracle errors that can be safely ignored.

- 13 Oracle Tablespace:** The default tablespace size for new instances is 512 MB. If this is not large enough to accommodate data contained in the instance that is being imported, you can resize the tablespace by using the **Administer Tablespaces** dialog box.

To resize an existing tablespace, highlight the database and select **Administer Tablespace**. The **Administer Tablespaces** dialog box opens.



#### NOTE

**Administer Tablespace** is not available in Amazon Cloud mode. For further information, see chapter ["Using RM Manage within the Amazon Cloud"](#) on page 798.

- 14** Select a datafile size and click **Resize**. A prompt asks "Do you wish to resize an existing datafile?".
- 15** Click **Yes**.
- 16** Click **Close**.

**IMPORTANT! New Instance Creation**

New Instances need new permissions. Almost all user and group permissions should be managed by the **Instance Administrator** in the User Interface.

**The System Administrator must grant administrator access** to the Instance Administrator as part of instance creation.

- Once the new instance has been created, add the Instance Administrator to the Administrator Group: ["Assigning Users to a Group" on page 512](#).
- Assign permissions to the Administrator group ensuring that new users can be added: ["Setting Default Group Permissions" on page 514](#).

## Using Advanced Options When Creating a New Instance with Oracle Databases

The **Advanced** button on the **Please Enter Instance Information** dialog box provides access to advanced tablespace options for new instances, such as inserting the new instance into a pre-existing tablespace and changing the default tablespace size.

**To use advanced options:**

- 1 In the **Please Enter Instance Information** dialog box, click **Advanced**. The dialog box expands to show advanced options.

**Please Enter Instance Information**

Instance Name:  OK

Instance Password:  Cancel

Confirm Instance Password:  Advanced <<

Administrator Password:

Confirm Administrator Password:

☒ Logon as administrator of this instance when finished Show Password Rules

Tablespace option:

☒ Create in new tablespace Administer Tablespaces...

☐ Create in existing tablespace

| Tablespace Name | Size (MB) | Avail (MB) |
|-----------------|-----------|------------|
| AGILE_RMDemo    | 512.00    | 511.00     |
| RMDemo          | 512.00    | 472.69     |
| SERENA_RM_ADMIN | 1024.00   | 1018.00    |
| SYSAUX          | 644.00    | 93.69      |
| SYSTEM          | 838.00    | 123.69     |

Tablespace Size: 512 Units: ☒ MBytes ☐ GBytes

- 2 To insert the new instance into a pre-existing tablespace, click **Create in existing tablespace**, and then select a tablespace from the list. Otherwise, the instance will be created in a new tablespace.
- 3 If you choose to create the instance in a new tablespace, you can change its size from the default size of 160 MB by editing the value in the **Tablespace Size** list box and selecting a **Units** option (megabytes or gigabytes).
- 4 If you choose to create the instance in an existing tablespace and you want to adjust the size of that tablespace to ensure it has enough space to hold the new instance, click **Administer Tablespaces** to access the tablespace management features (described in ["Administering Tablespaces" on page 769](#)).

## Creating a New Instance with MS SQL Server Databases

An instance is a work area where information is created and maintained. Dimensions RM provides you with the ability to create and delete instance accounts, backup and restore instances and administer user accounts.

**To create a new instance:**

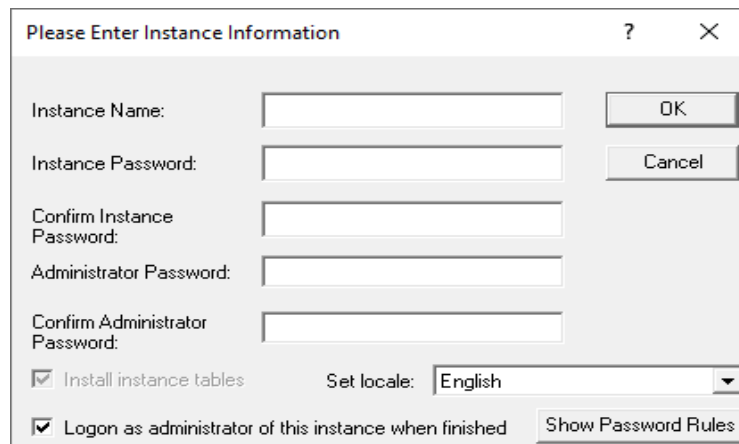
- 1 In **RM Manage**, select the database in which you want to add the new instance.
- 2 Right-click the database and select **New Instance**.

- 3 The **Please enter password** dialog box opens. In the **Password** field, type the password for the Dimensions RM ICDBA account.

If the ICADMIN user has not been created, the **Enter ICADMIN password** dialog box opens. The ICADMIN password is not a login account.

**Execute the following steps in this dialog:**

- a In the **ICADMIN Password** field, type the password to be assigned that account.
  - b Click **OK**.
- 4 The **Please Enter Instance Information** dialog box opens. Complete the following fields as needed.



The dialog box titled "Please Enter Instance Information" contains the following fields and controls:

- Instance Name: [Text Field]
- Instance Password: [Text Field]
- Confirm Instance Password: [Text Field]
- Administrator Password: [Text Field]
- Confirm Administrator Password: [Text Field]
- ☒ Install instance tables
- Set locale: [English] (dropdown menu)
- ☒ Logon as administrator of this instance when finished
- Buttons: OK, Cancel, Show Password Rules

| Please Enter Instance Information Dialog                                          |                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                                                                             | Description                                                                                                                                                                                                                                                                                                                                                             |
| Instance Name                                                                     | Enter an instance name (for example, MYINSTANCE).                                                                                                                                                                                                                                                                                                                       |
|  | <b>CAUTION!</b> The instance name must follow the conventions specified in <a href="#">"Naming Conventions for Instances"</a> on page 610.                                                                                                                                                                                                                              |
| Instance Password                                                                 | Enter an instance password (for example, MYINSTANCE). This password is used by Dimensions RM to access MS SQL Server. RM users do not use it directly in Dimensions RM.<br><br><b>NOTE</b> Instance passwords cannot begin with a number. For example, 12345 causes an error; however, a12345 is accepted. Click <b>Show Password Rules</b> for a summary of the rules. |
| Confirm Instance Password                                                         | Re-enter the instance password.                                                                                                                                                                                                                                                                                                                                         |
| Administrator Password                                                            | Enter a password for the Instance administrator account. This account has access only to this instance in RM Manage. The ID for this account is the instance name, with Admin appended, for example: MYINSTANCEAdmin                                                                                                                                                    |
| Confirm Administrator Password                                                    | Re-enter the administrator password.                                                                                                                                                                                                                                                                                                                                    |
| Install instance tables                                                           | With MS SQL Server, this option can't be modified. You will always create an empty instance.                                                                                                                                                                                                                                                                            |
| Set Locale                                                                        | Set the Default Language for the Instance; this may be changed by individual users via User Settings.<br>Available languages include: Chinese, English, German, Japanese, Spanish, and Brazilian Portuguese.                                                                                                                                                            |
| Logon as administrator of this instance when finished                             | Upon completion of the create operation, opens the new instance and logs you in as the administrator.                                                                                                                                                                                                                                                                   |

- 5 Click **OK**. The create operation runs.

**IMPORTANT! New Instance Creation**

New Instances need new permissions. Almost all user and group permissions should be managed by the **Instance Administrator** in the User Interface.

**The System Administrator must grant administrator access** to the Instance Administrator as part of instance creation.

- Once the new instance has been created, add the Instance Administrator to the Administrator Group: ["Assigning Users to a Group" on page 512](#).
- Assign permissions to the Administrator group ensuring that new users can be added: ["Setting Default Group Permissions" on page 514](#).

## Creating a New Instance with PostgreSQL Databases

An instance is a work area where information is created and maintained. Dimensions RM provides you with the ability to create and delete instance accounts, backup and restore instances and administer user accounts.

**To create a new instance:**

- 1** In **RM Manage**, select the database in which you want to add the new instance.
- 2** Right-click the database and select **New Instance**.
- 3** The **Please enter password** dialog box opens. In the **Password** field, type the password for the Dimensions RM ICDBA account.
- 4** The **Please Enter Instance Information** dialog box opens. Complete the following fields as needed.

| Instance Information Dialog                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field Name                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Instance Name<br>      | Enter an instance name (for example, <b>MYINSTANCE</b> ).<br><b>CAUTION!</b> The instance name must follow the conventions specified in Section <a href="#">"Naming Conventions for Instances"</a> on page 610                                                                                                                                                                                                                                                                                                                     |
| Instance Password<br> | Enter an instance password (e.g., XyzzyZZY.42). This password is used by Dimensions RM to access Oracle. It is not a login password.<br><b>CAUTION!</b> Instance passwords cannot begin with a number. For example, 12345 causes an error; however, a12345 is accepted. Click <b>Show Password Rules</b> for a summary of the rules.                                                                                                                                                                                               |
| Confirm Instance Password                                                                                | Re-enter the instance password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Administrator Password                                                                                   | Enter a password for the Instance administrator account. This account has access only to this instance in RM Manage. The ID for this account is the instance name, with Admin appended, for example: MYINSTANCEAdmin<br><br>Historically, this account was used by the Instance Administrator to manage schema, groups and users in that instance. This functionality is now available in the UI, and security requirements have required that only individuals designated as System Administrators may access RM Manage directly. |
| Confirm Administrator Password                                                                           | Re-enter the administrator password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



| Instance Information Dialog                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field Name                                                                                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Install instance tables                                                                                                                         | <p><b>Selected:</b> When creating a new instance, the instance will be, initially, empty.</p> <p><b>Cleared:</b> During the creation process, the Import dialog opens from which you can import a sample instance, a locally saved instance, or a backup.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Set Locale                                                                                                                                      | Set the Default Language for the Instance. This may be changed by individual users via User Settings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>Logon as administrator of this instance when finished.</p>  | <p><b>Selected:</b> Current user will be logged in as the RM Manage Instance Admin (e.g., MyinstanceAdmin).</p> <p><b>Cleared:</b> Recommended, you will remain logged in as the System Administrator.</p> <p>In either case, you must assign at least one user with the role of <b>Instance Administrator</b> to this instance.</p> <p>If no users have been created, please create one or two - once the Instance Administrator is created and assigned, they can take care of user creation from the user interface.</p> <ul style="list-style-type: none"> <li>■ <a href="#">"Creating a New User" on page 507</a></li> <li>■ <a href="#">"Assigning Users to a Group" on page 512</a>: in order to add the Instance Administrator(s) to the Administrator group for the instance specified</li> <li>■ <a href="#">"Setting Default Group Permissions" on page 514</a> in order to assign permissions to the Administrator group in this new instance.</li> </ul> |

- 5 Click **OK**. The create operation runs.
- 6 **Tablespace Error** dialog boxes may open during instance creation to indicate that particular tables are not large enough. If this occurs, do the following for each **Tablespace Error** dialog box:
  - a Read and take note of the error message in the dialog box. You will need to refer to the values recommended here later.
  - b Click **Yes**. A **Resize Tablespace** dialog box opens.
  - c Increase the value in the **New Datafile Size** field by at least the amount recommended in [Step a](#).
  - d Click **Resize**. A **Resize** dialog box opens.
  - e In the **Resize** dialog box, click **Yes**.
  - f In the **Resize Tablespace** dialog box, click **Close**.

- 7 A Success dialog appears. Click **OK**.

**IMPORTANT! New Instance Creation**

New Instances need new permissions. Almost all user and group permissions should be managed by the **Instance Administrator** in the User Interface.

**The System Administrator must grant administrator access** to the Instance Administrator as part of instance creation.

- Once the new instance has been created, add the Instance Administrator to the Administrator Group: ["Assigning Users to a Group" on page 512](#).
- Assign permissions to the Administrator group ensuring that new users can be added: ["Setting Default Group Permissions" on page 514](#).

- 8 Once the instance has been created, the Instance Administrator may populate the instance:
- a The contents of a previously saved instance may be restored to populate the new instance: ["Restoring an Instance Account from a Backup" on page 742](#)
  - b A schema may be deployed from an existing instance: ["Deploying the Instance Schema" on page 813](#)
  - c A new schema may be created using ["Schema Class Creation" on page 570](#).

## Changing the Database Instance Password

This section describes how to change an instance password.

If your instance password has been changed without using RM Manage, see chapter ["Updating the Instance Password" on page 735](#).

See also ["Database Administrator Accounts" on page 761](#) and ["Changing the Current RM Manage User" on page 767](#).

### To change the instance password:

- 1 In **RM Manage**, select the instance for which you want to change the password.
- 2 Right-click the database and select **Change Instance Password**.
- 3 Enter your system administrator password.
- 4 Click **OK**. This opens the **Change Instance Password/Instance Admin Password** dialog.
- 5 Select the **Retain the current Instance Admin password** option. This disables all text boxes and options related to the instance admin password.
- 6 Type the new password into the **Instance (DB) Password** box.

- 7 Re-type the password into the **Confirm Instance (DB) Password** box.
- 8 Click **OK**.

## Updating the Instance Password

This section describes how to update the password record if the database password for the instance has been changed without using RM Manage.

For a regular password change, see chapter ["Changing the Database Instance Password" on page 734](#).

See also ["Database Administrator Accounts" on page 761](#) and ["Changing the Current RM Manage User" on page 767](#).

### To update the instance password:

- 1 In **RM Manage**, select the instance for which you want to change the password.
- 2 Right-click the database and select **Change Instance Password**.
- 3 Enter your system administrator password.
- 4 Click **OK**. This opens the **Change Instance Password/Instance Admin Password** dialog.
- 5 Select the **Retain the current InstanceAdmin password** option. This disables all text boxes and options related to the instance admin password.
- 6 Select the **Apply DB password** option. This disables the **Confirm Instance (DB) Password** box.
- 7 Type the new password into the **Instances (DB) Password** box.
- 8 Click **OK**.

## Dimensions RM Backup

When using an Oracle Database see: ["Backing Up an Instance Account under Oracle" on page 735](#)

When using MS SQL Server see: ["Backing Up an Instance Account under MS SQL Server" on page 738](#)

When using PostgreSQL: ["Backing Up an Instance Account under PostgreSQL" on page 740](#)

### ***Backing Up an Instance Account under Oracle***

The backup of the instance account will back up the associated Oracle account, containing:

- Oracle tables** holding the entire Dimensions RM schema metadata.
- Other Oracle tables** holding the actual requirement data.

**NOTE**

- When running in Amazon Cloud mode, backups can only be created in legacy mode. For further information, see chapter ["Using RM Manage within the Amazon Cloud"](#) on page 798.

**To back up an instance account:**

- 1 To ensure complete reliability of the backup, it is advisable that no users are accessing Dimensions RM while the backup is in progress. Before initiating the backup, stop the following services:
  - Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM E-Mail Notification Service (if it ran before)
- 2 In **RM Manage** please select the instance to be backed up.
- 3 Select **File | Backup/Restore Instance Account**.
- 4 If prompted, enter your ICDBA password and click **OK**.
- 5 The Backup/Restore Instance dialog appears. Enter the path intended to hold backups, as well as the file name.

**Backup/Restore Instance Dialog**

| Field                     | Description                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legacy/Compatibility Mode | Formats the backup so that can be imported on systems that only support legacy mode.                                                                                                                                                                                                                                                                                                  |
| Directory Path            | <p>This field is automatically populated with the last modified server directory path for the selected instance. Edit the path as needed.</p> <p><b>NOTE</b> This field is not available in Legacy Mode.</p>                                                                                                                                                                          |
| File Name                 | <p>This field is automatically populated with a name for the backup file. The name is based upon the database or instance name and the current date and time. Edit this name as needed.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>▪ <b>Legacy Mode:</b> The path to the Saved Projects directory of the RM installation is prepended to the file name.</li> </ul> |

| Backup/Restore Instance Dialog |                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                          | Description                                                                                                                                                                                                                                                                                                                     |
| ...                            | <p>Opens a dialog to select the backup file.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>▪ <b>Normal Mode:</b> Enter the dump file name as described for the <b>File Name</b> field.</li> <li>▪ <b>Legacy Mode:</b> This opens a file selection dialog to choose a file name for saving to backup.</li> </ul> |
| Security Data                  | Exports all the users that have been assigned to this instance, as well as their permissions, so that they may be imported into another instance.                                                                                                                                                                               |
| Buffer Size                    | <p><b>NOTE</b> Legacy Mode only.</p> <p>This sets the temporary space available for the operation. The default, and maximum, buffer size is 100MB. You can adjust the amount if needed.</p>                                                                                                                                     |

- 6** Click the **Backup** button. The backup operation runs.
- 7** Click **Display Log** to view a log of the backup operation.
- 8** Restart the following services:
  - Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM E-Mail Notification Service (if it ran before)

**Backing Up an Instance Account under MS SQL Server****PRIVILEGES**

The backup will be created on the server.

Before beginning the backup, ensure that MS SQL Server can access the directory you want to write the backup file to.

**To grant write access to a directory, do the following:**

- 1** In Windows Explorer, right-click the folder you want to grant write access to.
- 2** Select **Properties** from the shortcut menu to open the **Properties** dialog.
- 3** Select the **Security** tab.
- 4** Click **Edit...** to open the **Permissions** dialog.
- 5** Click **Add...**. This opens the **Select Users or Groups** dialog.
- 6** Enter **NT SERVICE\MSSQLSERVER** and click **OK**.
- 7** In the Allow column, select the **Full control** option and click **OK**.
- 8** Click **OK** to close the **Properties** dialog.

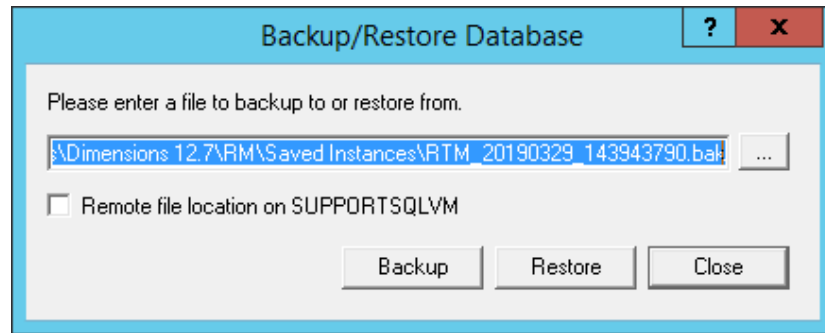
The MS SQL Server backup will back up the whole database holding that instance account.

Each instance account contains:

- Database tables holding the entire Dimensions RM schema metadata.
- Other database tables holding the actual requirement data. The backup of the instance account will back up the associated Oracle account, containing:.

**To back up an instance account:**

- 1** To ensure complete reliability of the backup, it is advisable that no users are accessing Dimensions RM while the backup is in progress. Before initiating the backup, stop the following services:
  - Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM E-Mail Notification Service if implemented
- 2** In **RM Manage**, right-click the database and select **Backup/Restore Database**.
- 3** If prompted, enter the ICDBA password and click **OK**.
- 4** The Backup/Restore Instance dialog appears. Complete the following fields as needed.



| Backup/Restore Instance Dialog |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| File Name                      | <p>This field is automatically populated with a name for the backup file. The name is based upon the database name and the current date and time. Edit this name as needed.</p> <ul style="list-style-type: none"> <li>■ <b>Local mode:</b> The path to the Saved Instances directory of the RM installation is prepended to the file name.</li> <li>■ <b>Remote mode:</b> The location is relative to the MS SQL Server directory path.</li> </ul> <p> <b>NOTE</b> You can manually enter the name of the BAK file.</p> |
| Remote file location           | Enable this option if Dimensions RM server and MS SQL Server run on different machines.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ...                            | Opens a dialog to select the backup file. This button is only available when the <b>Remote file location</b> option is turned off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

5 Click the **Backup** button. The backup operation runs.

6 Click **Display Log** to view a log of the backup operation.

The log file is saved in the directory where the backup was created. It has the same name as the instance, but with a .log extension instead of a .dmp extension. It also includes the letters "Exp" and a time stamp based upon the backup operation, e.g. *InstanceName\_ExpDate\_ExpTime\_Exp.log*

7 Restart the following services:

- Dimensions RM Pool Manager
- Dimensions RM Common Tomcat
- Dimensions RM E-Mail Notification Service, if implemented

## Backing Up an Instance Account under PostgreSQL



### IMPORTANT!

When you back up an instance account, you back up a PostgreSQL account containing:

- Database tables holding the entire Dimensions RM schema metadata.
- Other database tables holding the actual requirement data.



### CAUTION!

Before beginning the backup, you need to ensure that no users are accessing Dimensions RM while instance data is secured. To ensure this, stop these services:

- **Dimensions RM Common Tomcat**
- **Dimensions RM Pool Manager**
- **Dimensions RM E-Mail Notification Service, if in use.**

Note that stopping **Dimensions RM Common Tomcat** will also disable other applications that may be using this service.



### NOTE

The backup will always be created on the database server.

The backup of the **PostgreSQL** instance will back up the associated account, containing:

The Dimensions RM schema metadata, together with the all requirement data.

### To back up an instance account:

- 1 To ensure complete reliability of the backup, it is advisable that no users are accessing Dimensions RM while the backup is in progress. Before initiating the backup, stop the following services:
  - Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM E-Mail Notification Service if implemented
- 2 In **RM Manage**, select the instance you want to back up.
- 3 Select **File | Backup/Restore Instance Account**.
- 4 If prompted, enter your administrator password and click **OK**.



- 5 The Backup/Restore Instance dialog appears. Complete the following fields as needed.

| Backup/Restore Instance Dialog |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| File Name                      | <p>This field is automatically populated with a name for the backup file. The name is based upon the database name and the current date and time. Edit this name as needed.</p> <ul style="list-style-type: none"> <li>▪ <b>Local mode:</b> The path to the Saved Instances directory of the RM installation is prepended to the file name.</li> <li>▪ <b>Remote mode:</b> The location is relative to the MS SQL Server directory path.</li> </ul> <p> <b>NOTE</b> You can manually enter the name of the BAK file.</p> |
| Include Security Data          | Exports all the users that have been assigned to this instance, as well as their permissions, so that they may be imported into another instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ...                            | Opens a dialog to select the backup file. This button is only available when the <b>Remote file location</b> option is turned off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

- 6 Click the **Backup** button. The backup operation runs.

- 7 Click **Display Log** to view a log of the backup operation.

The log file is saved in the directory where the backup was created. It has the same name as the instance, but with a .log extension instead of a .dmp extension. It also includes the letters "Exp" and a time stamp based upon the backup operation, e.g.: *InstanceName\_ExpDate\_ExpTime\_Exp.log*

- 8 Restart the **Dimensions RM E-Mail Service** service.

- 9 Restart the following services:

- Dimensions RM Pool Manager
- Dimensions RM Common Tomcat
- Dimensions RM E-Mail Notification Service (if in use)

## Restoring an Instance Account from a Backup

### *Restoring an Instance Account under Oracle*



#### CAUTION!

Before restoring the backup, you need to ensure that no users are accessing Dimensions RM while instance data is secured. To ensure this, stop these services:

- **Dimensions RM Common Tomcat**
- **Dimensions RM Pool Manager**
- **Dimensions RM E-Mail Notification Service, if in use.**

Note that stopping **Dimensions RM Common Tomcat** will also disable other applications that may be using this service.



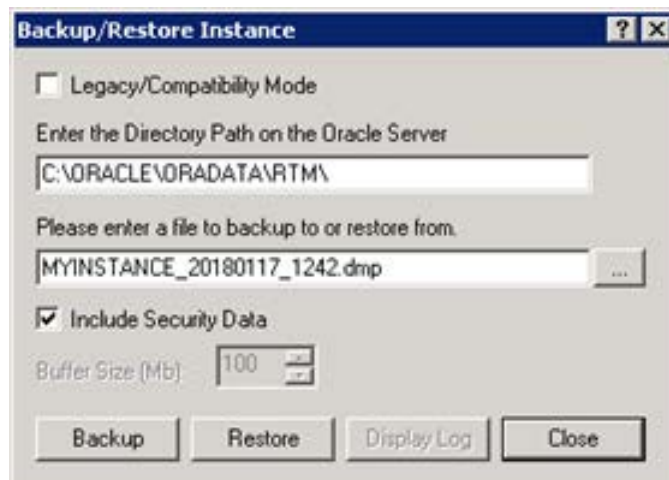
#### NOTE

When running in Amazon Cloud mode, backups can only be restored in legacy mode. For further information, see chapter ["Using RM Manage within the Amazon Cloud"](#) on page 798.

#### **To restore an instance account from a backup using the RM Manage interface:**

- 1** Check that the instance you wish to restore has (Current) next to its name. If this is not the case then you will first need to run the **Convert Database** command on the database and its instance accounts before performing the instance account restores. To convert the instance see chapter ["Converting Database and Instances"](#) on page 754.
- 2** In **RM Manage**, select the instance you want to restore.
- 3** Select **File | Backup/Restore Instance Account**.

- 4 The Backup/Restore Instance dialog appears. Complete the following fields as needed.



**Backup/Restore Instance Dialog**

| Field                                                                                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legacy/Compatibility Mode                                                                        | Select this check box if you wish to restore from a backup file that was created in Legacy Mode with RM 12.5.1 or newer.                                                                                                                                                                                                                                                                                                                                             |
| Oracle Directory Path                                                                            | This field is automatically populated with the last modified server directory path for the selected instance. Edit the path as needed.<br><br><b>NOTE</b> This field is not available in Legacy Mode.                                                                                                                                                                                                                                                                |
| File Name<br> | Enter the name of the file to restore from, or click ... to select one.<br><br><ul style="list-style-type: none"> <li>■ <b>Normal Mode:</b> The file location is relative to the Oracle directory path.<br/><br/><b>NOTE</b> You can manually enter the name of the DMP file instead of selecting from those of the dialog.</li> <li>■ <b>Legacy Mode:</b> The path to the Saved Projects directory of the RM installation is prepended to the file name.</li> </ul> |
| ...<br>       | Opens a dialog to select the backup file.<br><br><ul style="list-style-type: none"> <li>■ <b>Normal Mode:</b> The dialog contains the DMP file names available on the server.<br/><br/><b>NOTE</b> You can only see the DMP files that were made from the currently selected instance.</li> <li>■ <b>Legacy Mode:</b> Opens a file selection dialog to choose the backup to restore. You can choose backup files from any available location.</li> </ul>             |

| Backup/Restore Instance Dialog |                                                                                                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                          | Description                                                                                                                                                                                 |
| Security Data                  | Imports all the users in the backed-up instance, as well as their permissions.                                                                                                              |
| Buffer Size                    | <p><b>NOTE</b> Legacy Mode only.</p> <p>This sets the temporary space available for the operation. The default, and maximum, buffer size is 100MB. You can adjust the amount if needed.</p> |

- 5 Click **Restore**. The restore operation runs.



#### NOTE

**Normal Mode only:** When restoring an instance, the **Please enter the from user** dialog may show.

- **From User:** Enter the RM instance name as it was on the system from which the backup was created.
- **Tablespace:** Enter the tablespace as it was on the system from which the backup was created. In most cases, the tablespace is identical with the text entered in **From User**.

The existing tablespace may not be large enough to accommodate the data contained in the instance that is being restored. In this case, you will be asked if you would like to resize the tablespace before continuing. The process of resizing the tablespace is discussed in ["Resizing a Tablespace" on page 770](#).

- 6 Click **Display Log** to view a log of the backup operation.

The log file is saved in the directory where the backup was created. It has the same name as the instance, but with a .log extension instead of a .dmp extension. It also includes the letters "Imp" and a time stamp based upon the restore operation, e.g. *InstanceName\_ExpDate\_ExpTime\_Imp\_ImpDate\_ImpTime.log*



#### NOTE

When importing in Legacy mode, you might receive these error messages:

- ORA-39082 ".... created with compilation warnings"
- ORA-39083: Object type JOB failed to create with error

You can safely ignore these errors.

- 7 Restart the following services:

- Dimensions RM Pool Manager
- Dimensions RM Common Tomcat

- Dimensions RM E-Mail Notification Service (if in use)

### **Restoring an Instance Account under MS SQL Server**



#### **CAUTION!**

Before restoring the backup, you need to ensure that no users are accessing Dimensions RM while instance data is secured. To ensure this, stop these services:

- **Dimensions RM Common Tomcat**
- **Dimensions RM Pool Manager**
- **Dimensions RM E-Mail Notification Service, if in use.**

Note that stopping **Dimensions RM Common Tomcat** will also disable other applications that may be using this service.

#### **To restore an instance account from a backup using the RM Manage interface:**

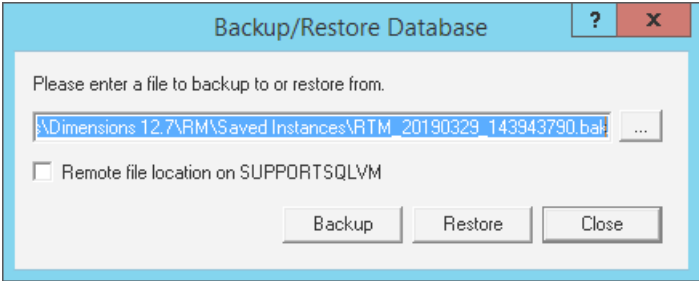
- 1 In **RM Manage**, right-click the database you want to restore and select **Backup/Restore Database** from the shortcut menu.



#### **CAUTION!**

Restoring a database will overwrite all RM instances of that database.

- 2 If requested, enter the password for the ICDBA user and click **OK**. This opens the **Backup/Restore Database** dialog.



| Backup/Restore Database Dialog |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| File Name                      | <p>Enter the name of the file to restore from, or click ... to select one.</p> <ul style="list-style-type: none"><li>■ <b>Local mode:</b> The path to the Saved Instances directory of the RM installation is prepended to the file name.</li><li>■ <b>Remote mode:</b> The file location is relative to the MS SQL Server directory path. Use the Remote mode if Dimensions RM server and MS SQL Server run on different machines.</li></ul> <p> <b>NOTE</b> You can manually enter the name of the BAK file.</p> |
| Remote file location           | <p>Enable this option if Dimensions RM server and MS SQL Server run on different machines.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ...                            | <p>Opens a file selection dialog to choose the backup to restore. This button is only available when the <b>Remote file location</b> option is turned off.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |

- 3 Click **Restore**. The restore operation runs.



**CAUTION!**

Restoring a database will overwrite all RM instances of that database.



**NOTE**

When restoring an instance, the **Enter ICADMIN password** dialog may show. Then, do the following:

- a Enter the password for the ICADMIN user into the **ICADMIN Password** box.
- b Click **OK**.

- 4 Verify that the restore of the database completed without errors.
- 5 Restart the following services:
  - Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM E-Mail Notification Service (if it ran before)

### ***Restoring an Instance Account under PostgreSQL***



#### **CAUTION!**

Before restoring the backup, you need to ensure that no users are accessing Dimensions RM while instance data is secured. To ensure this, stop these services:

- **Dimensions RM Common Tomcat**
- **Dimensions RM Pool Manager**
- **Dimensions RM E-Mail Notification Service, if in use.**

Note that stopping **Dimensions RM Common Tomcat** will also disable other applications that may be using this service.

#### **To restore an instance account from a backup using the RM Manage interface:**

- 1 Check that the instance you wish to restore has (Current) next to its name. If this is not the case (for example it has a suffix of (VRM2010 R1 GA)), then you will first need to run the **Convert Database** command on the database and its instance accounts before performing the instance account restores. To convert the instance see chapter ["Converting Database and Instances" on page 754](#).
- 2 In **RM Manage**, select the instance you want to restore.
- 3 Select **File | Backup/Restore Instance Account**.

- 4 The Backup/Restore Instance dialog appears. Complete the following fields as needed.

| Backup/Restore Instance Dialog                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field                                                                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| File Name<br> | <p>Enter the name of the file to restore from, or click ... to select one.</p> <ul style="list-style-type: none"> <li>■ <b>Normal Mode:</b> The file location is relative to the Oracle directory path.</li> </ul> <p><b>NOTE</b> You can manually enter the name of the DMP file instead of selecting from those of the dialog.</p> <ul style="list-style-type: none"> <li>■ <b>Legacy Mode:</b> The path to the Saved Projects directory of the RM installation is prepended to the file name.</li> </ul> |
| ...<br>     | <p>Opens a dialog to select the backup file.</p> <ul style="list-style-type: none"> <li>■ <b>Normal Mode:</b> The dialog contains the DMP file names available on the server.</li> </ul> <p><b>NOTE</b> You can only see the DMP files that were made from the currently selected instance.</p> <ul style="list-style-type: none"> <li>■ <b>Legacy Mode:</b> Opens a file selection dialog to choose the backup to restore. You can choose backup files from any available location.</li> </ul>             |
| Include Security Data                                                                          | Imports all the users in the backed-up instance, as well as their permissions.                                                                                                                                                                                                                                                                                                                                                                                                                              |

- 5 Click **Restore**. The restore operation runs.
- 6 Click **Display Log** to view a log of the backup operation.
- 7 Restart the following services:
- Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM E-Mail Notification Service (if it ran before)



## Backing Up Instances from the Command Line

In addition to using the **Backup/Restore Instance Account** option in RM Manage, System Administrators can back up an instance from the command line. The security information for the instance is automatically included in the backup.



### NOTE

Instances cannot be restored using the command line. You must use the RM Manage tool to restore a backed-up instance, regardless of how the backup file was created.

The following table describes the backup command line parameters:

| Parameter          | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| icmanage           | If <RM Install Dir>\bin is not specified in your PATH environment variable, you must navigate to the <RM Install Dir>\bin directory.                                                                                                                                                                                                                                                          |
| -location          | Oracle database instance name (connection stream).                                                                                                                                                                                                                                                                                                                                            |
| -project           | Name of the instance to be backed up.                                                                                                                                                                                                                                                                                                                                                         |
| -password          | Password that is used for the instance, <i>not</i> the Dimensions RM user account password.                                                                                                                                                                                                                                                                                                   |
| -buffer (optional) | <b>Valid values: 1...100</b><br>Size of the buffer, as a positive integer. This is the amount of temporary space needed to complete the Oracle import/export command. For example, -buffer 65 reserves 65 MB of buffer space. The buffer size can be a maximum of 100 MB, and the default is 50 MB.                                                                                           |
| -dumpfile          | Name and location of the backup file. When it is created, the name is appended with a <DateTimeStamp> and a .dmp extension. The timestamp format is DD_MM_YYYY_HH_MI_SS. In Legacy Mode, if no path is specified, the file is stored in the Saved Projects folder of the <RM Install Dir> directory. In non-legacy mode, the location is relative to the Oracle directory path on the server. |
| -legacy            | <b>Valid values: yes, no</b><br><b>Yes</b> creates a backup file using the legacy format.<br><b>No</b> uses the newer format.<br><br><b>NOTE</b> When running in Amazon Cloud mode, backups can only be created in legacy mode. For further information, see chapter <a href="#">"Using RM Manage within the Amazon Cloud" on page 798</a> .                                                  |
| -rmdbausername     | <b>Valid value: ICDBA</b><br>The Oracle user ID for icmanage.                                                                                                                                                                                                                                                                                                                                 |

| Parameter      | Description                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -rmdbapassword | The password of the Oracle user ID for icmanage.                                                                                                                                        |
| -encrypt       | <b>Valid values: yes, no</b><br>Specify <b>Yes</b> when using encrypted passwords.<br>Specify <b>No</b> or do not use the -encrypt option when using passwords which are not encrypted. |

### **Backing up in Normal Mode under Oracle**



#### **NOTE Amazon Cloud**

When running in Amazon Cloud mode, backups can only be created in legacy mode. For further information, see chapter ["Using RM Manage within the Amazon Cloud"](#) on page 798.

To create your backup in **Normal Mode**, use the following syntax (all in one line):

```
icmanage -location <DatabaseInstanceName>
-project <InstanceName>
-password <InstancePassword>
[-buffer <BufferSize>]
-dumpfile <PathAndNameOfBackupFileToCreate>
-legacy no
-rmdbausername ICDBA
-rmdba_password <ICDBAPassword>
```

#### **Example**

The following command backs up an RM instance with a password of pwd to a file named rminstancebackup in the backup directory of the E drive. The Oracle instance name is orcl1.

```
icmanage -location orcl1 -project rminstance -password pwd -dumpfile
e:\backup\rminstancebackup -legacy no -rmdbausername ICDBA
-rmdbapassword ICDBA
```

When you execute this command, the backup file rminstancebackup<timestamp>.dmp is created in the backup folder on drive E. If the backup folder does not exist, it is also created. The buffer size is the default of 50 MB.

#### **Backing up with Encrypted Passwords in Normal Mode**

```
icmanage -location <DatabaseInstanceName>
-project <InstanceName>
-password <encrypted_InstancePassword>
[-buffer <BufferSize>]
-dumpfile <PathAndNameOfBackupFileToCreate>
-legacy no
-rmdbausername ICDBA
-rmdbapassword <encrypted_ICDBAPassword>
-encrypt yes
```

To learn how to get encrypted passwords, see chapter ["Backing up with Encrypted Password"](#) on page 752.

## Example

The following command backs up an RM instance with encrypted passwords to a file named `rinstancebackup` in the backup directory of the E drive. The Oracle instance name is `orcl1`.

```
icmanage -location orcl1 -project rinstance -password 8548FE01CD673210
-dumpfile e:\backup\rinstancebackup -legacy no -rmdbausername ICDBA
-rmdbapassword 9674BA5269718A05 -encrypt yes
```

When you execute this command, the backup file `rinstancebackup<timestamp>.dmp` is created in the backup folder on drive E. If the backup folder does not exist, it is also created. The buffer size is the default of 50 MB.

## Backing up in Legacy Mode under Oracle

If the Oracle database is installed in Amazon's AWS cloud, backups must be created in Legacy mode. For other environments it is recommended to use the Normal Mode (see chapter ["Backing up in Normal Mode under Oracle" on page 750](#)).

To create your backup in **Legacy Mode**, use the following syntax (all in one line):

```
icmanage -location <DatabaseInstanceName>
-project <InstanceName>
-password <InstancePassword>
[-buffer <BufferSize>]
-dumpfile <PathAndNameOfBackupFileToCreate>
-rmdbausername ICDBA
-rmdbapassword <ICDBAPassword>
-legacy yes
```

## Example

The following command backs up an RM instance with a password of `pwd` to a file named `rinstancebackup` in the backup directory of the E drive. The Oracle instance name is `orcl1`.

```
icmanage -location orcl1 -project rinstance -password pwd -dumpfile
e:\backup\rinstancebackup -legacy yes -rmdbausername ICDBA
-rmdbapassword ICDBA
```

When you execute this command, the backup file `rinstancebackup<timestamp>.dmp` is created in the backup folder on drive E. If the backup folder does not exist, it is also created. The buffer size is the default of 50 MB.

## Backing up with Encrypted Passwords in Legacy Mode

```
icmanage -location <DatabaseInstanceName>
-project <InstanceName>
-password <encrypted_InstancePassword>
[-buffer <BufferSize>]
-dumpfile <PathAndNameOfBackupFileToCreate>
-legacy yes
-rmdbausername ICDBA
-rmdbapassword <encrypted_ICDBAPassword>
-encrypt yes
```

To learn how to get encrypted passwords, see chapter ["Backing up with Encrypted Password" on page 752](#).

**Example**

The following command backs up an RM instance with encrypted passwords to a file named `rinstancebackup` in the backup directory of the E drive. The Oracle instance name is `orcl1`.

```
icmanage -location orcl1 -project rinstance -password 8548FE01CD673210
-dumpfile e:\backup\rinstancebackup -legacy yes -rmdbausername ICDBA
-rmdbapassword 9674BA5269718A05 -encrypt yes
```

When you execute this command, the backup file `rinstancebackup<timestamp>.dmp` is created in the backup folder on drive E. If the backup folder does not exist, it is also created. The buffer size is the default of 50 MB.

**Backing up with Encrypted Password**

For both, Normal Mode and Legacy Mode, you can use encrypted passwords. When using encrypted passwords, you have to add `-encrypt yes` to the command line. Note that you have to encrypt both, instance password and RMDBA password.

To get the encrypted password, follow these steps:

- 1 Open a Command Prompt.
- 2 Change directory to `<RM Install Dir>\bin`.
- 3 Type `AlfEventEmitter -l c:\test -p YOUR_PASSWORD`  
(Replace `YOUR_PASSWORD` with the password you want to encrypt.)
- 4 Hit **Enter**.  
The next line in the Command Prompt shows:  
Encrypted value = "`YOUR_ENCRYPTED_PASSWORD`"
- 5 Copy the encrypted password into your `icmanage` command line.

**Backing up under MS SQL Server**

For MS SQL Server, the backup does always include the full database.

To create your backup, use the following syntax (all in one line):

```
icmanage -location <DatabaseInstanceName>
-dumpfile <PathAndNameOfBackupFileToCreate>
-rmdbapassword <ICDBAPassword>
```

**Example**

The following command backs up an RM instance with a password of `pwd` to a file named `rinstancebackup` in the backup directory of the E drive. The SQL Server database instance name is `RTM`.

```
icmanage -location RTM -dumpfile e:\backup\rinstancebackup
-rmdbapassword ICDBA
```

When you execute this command, the backup file `rinstancebackup<timestamp>.bak` is created in the backup folder on drive E. If the backup folder does not exist, it is also created. The buffer size is the default of 50 MB.

### Backing up with an Encrypted Password

```
icmanage -location <DatabaseInstanceName>
-dumpfile <PathAndNameOfBackupFileToCreate>
-rmdbapassword <encrypted_ICDBAPassword>
-encrypt yes
```

To learn how to get encrypted passwords, see chapter ["Backing up with Encrypted Password" on page 752](#).

#### Example

The following command backs up an RM instance with encrypted passwords to a file named `rminstancebackup` in the backup directory of the E drive. The SQL Server instance name is `RTM`.

```
icmanage -location RTM -dumpfile e:\backup\rminstancebackup
-rmdbapassword 9674BA5269718A05 -encrypt yes
```

When you execute this command, the backup file `rminstancebackup<timestamp>.bak` is created in the backup folder on drive E. If the backup folder does not exist, it is also created. The buffer size is the default of 50 MB.

### Backing up under PostgreSQL

To create your backup, use the following syntax (all in one line):

```
icmanage -location <DatabaseInstanceName>
-project <InstanceName>
-password <InstancePassword>
-dumpfile <PathAndNameOfBackupFileToCreate>
-rmdbausername ICDBA
-rmdba_password <ICDBAPassword>
```

#### Example

The following command backs up an RM instance with a password of `pwd` to a file named `rminstancebackup` in the backup directory of the E drive. The PostgreSQL instance name is `DRM`.

```
icmanage -location DRM -project rminstance -password pwd -dumpfile
e:\backup\rminstancebackup -rmdbausername ICDBA -rmdbapassword ICDBA
```

When you execute this command, the backup file `rminstancebackup<timestamp>.pgdmp` is created in the backup folder on drive E. If the backup folder does not exist, it is also created.

### Backing up with Encrypted Passwords

```
icmanage -location <DatabaseInstanceName>
-project <InstanceName>
-password <encrypted_InstancePassword>
dumpfile <PathAndNameOfBackupFileToCreate>
-rmdbausername ICDBA
-rmdbapassword <encrypted_ICDBAPassword>
-encrypt yes
```

To learn how to get encrypted passwords, see chapter ["Backing up with Encrypted Password" on page 752](#).

### Example

The following command backs up an RM instance with encrypted passwords to a file named `rinstancebackup` in the backup directory of the E drive. The PostgreSQL instance name is `DRM`.

```
icmanage -location DRM -project rinstance -password 8548FE01CD673210
-dumpfile e:\backup\rinstancebackup -rmdbausername ICDBA
-rmdbapassword 9674BA5269718A05 -encrypt yes
```

When you execute this command, the backup file `rinstancebackup<timestamp>.pgdmp` is created in the backup folder on drive E. If the backup folder does not exist, it is also created.

## Converting Database and Instances

The database and the RM instances must be converted when upgrading Dimensions RM or restoring an instance account that was created with an older version of Dimensions RM.

**To convert the database or an instance, do the following:**

- 1 Right-click the database and select **Convert Database** from the shortcut menu. This opens the **Database Validation** dialog.
- 2 Expand the Dimensions RM database, by clicking the + sign next to its name. This opens the **ICDBA Password** dialog.
- 3 Enter the password for the ICDBA user and click **OK**.  
If the database needs to be upgraded, you will find the database name is suffixed (not current).
- 4 If RM Manage shows a message to update the database, confirm the automatic update request by clicking **Yes**. If you want to update the database manually, select the database name and click **Upgrade**.
- 5 To upgrade an instance, do the following:
  - a Select an instance account that requires updating. Any instance that shows (Current) after its name, **does not** require updating.
  - b Click **Upgrade**. This opens the **Conversion Progress** dialog.
  - c Click **Continue** to start the conversion process.
  - d When the **Conversion Progress** dialog reports that the upgrade has been completed successfully, click **Close**.
  - e Repeat steps a-d for any other instances that require upgrading.
- 6 When all instances have been upgraded, click **Close** to close the **Database Validation** dialog.

## Deleting an Instance Account

When you delete an instance account, the instance user account and all data associated with the account is deleted from Oracle. You cannot retrieve deleted instance data.

**To delete an instance account:**

- 1 In **RM Manage**, select the instance you want to delete.
- 2 Right-click the database and select **Delete Instance Account**.
- 3 Click **Yes** to confirm the deletion.

## Defining the Instance Schema

**To define or modify the contents of the instance schema:**

The Classes, attributes and Relationships included in the Instance Schema can be defined and modified by the Instance Administrator using Schema Definition see ["Defining a Class" on page 571](#).

The following describes access to Class Definition to define or modify the schema from RM Class Definition tool. Only System Administrators have access to Class Definition.

- 1 In **RM Manage**, select the instance for which you want to define the schema.
- 2 Right-click the database and select **Define Instance Schema**. The Class Definition tool appears.
- 3 Define the instance schema in the Class Definition tool. Refer to ["Class Definition Application" on page 805](#) for information about Class Definition.

## Backing Up an Instance Schema

**NOTE**

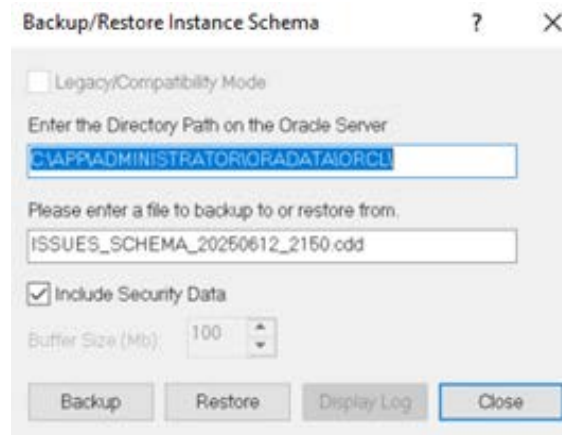
**Instance Schema backup** is only supported by Oracle. With all databases, the schema can be **Deployed** (see ["Deploying the Instance Schema" on page 813](#))

You cannot backup an instance schema when running in Amazon Cloud mode. For further information, see chapter ["Using RM Manage within the Amazon Cloud" on page 798](#).

**To back up instance schema:**

- 1 In **RM Manage**, select the instance you want to back up.

- 2 Right-click the instance and select **Backup/Restore Instance Schema**. The **Backup/Restore Schema** dialog box opens.



(See also ["Dimensions RM Backup" on page 735](#), which explains the difference between an instance account and an instance schema.)

- 3 Enter the path on the Oracle server under which you want to save the schema.
- 4 Enter the file name under which you want to save the schema.
- 5 By default, the **Include Security Data** option is selected. This will import all user accounts, group assignments and associated permissions defined in the instance schema. If the group and user information is not needed in the new instance, clear the option.
- 6 Click **Backup**. This opens the **Backup instance schema** dialog which shows the output from the backup. This output is saved in a log file in the directory to which you saved the schema. The log file has the same name apart from the addition `_Exp` and the file extension, which is `.log` instead of a `.cdd`.
- 7 Click **Close** to close the **Backup instance schema** dialog.
- 8 Click **Close** to close the **Backup/Restore Instance Schema** dialog.



## Restoring an Instance Schema from a Backup

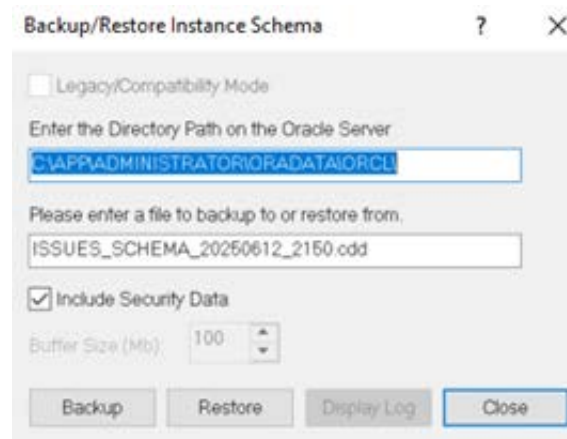


### NOTE

- Instance schemas can only be restored up if an Oracle database is used. With all databases, the schema as well as updates to the schema can be **Deployed** (see ["Deploying the Instance Schema" on page 813](#))
- An instance schema cannot be restored when running in Amazon Cloud mode. For further information, see chapter ["Using RM Manage within the Amazon Cloud" on page 798](#).

### To restore an instance schema from backup:

- 1 In **RM Manage**, select the instance you want to restore.
- 2 Right-click the instance and select **Backup/Restore Instance Schema**. The **Backup/Restore Schema** dialog box opens.



(See also ["Restoring an Instance Account from a Backup" on page 742](#), which explains the difference between an instance account and an instance schema.)

- 3 Enter the path on the Oracle server under which you want to save the schema.
- 4 Enter the file name under you wish to restore the schema from.
- 5 By default, the **Include Security Data** option is selected. This will import all user accounts, group assignments and associated permissions defined in the instance schema. If the group and user information is not needed in the new instance, clear the option.
- 6 Click **Restore**.
- 7 Into the **From User** box and **Tablespace** box, enter the instance name from which this schema was exported. Then, click **OK**. This opens the **Restore instance schema** dialog which shows the output from the backup. This output is saved in a log file in the directory to which you saved the schema. The log file has the same name apart from

the addition `_Imp` with a time stamp, and the file extension, which is `.log` instead of a `.cdd`.

The existing tablespace may not be large enough to accommodate the data contained in the instance that is being restored. In this case, you will be asked if you would like to resize the tablespace prior to continuing. See ["Resizing a Tablespace" on page 770](#) for information about resizing the tablespace.

- 8 Click **Close** to close the **Restore instance schema** dialog.
- 9 Click **Close** to close the **Backup/Restore Instance Schema** dialog.

## Placing an Instance Account Offline

Placing an instance offline is a convenient way to stop users from accessing it, either temporarily or for retirement. An instance may also be placed offline when performing backups.

**To place an instance account offline:**

- 1 In **RM Manage**, select the instance you want to place offline.
- 2 Right-click the Instance and select **Place Instance Account Offline**.

## Placing an Instance Account Online

If you have placed an instance offline to perform backups or to prevent users from accessing an instance, you can place it online again.

**To place an instance account online:**

- 1 In **RM Manage**, select the instance you want to place online.
- 2 Right-click the Instance and select **Place Instance Account Online**.

## Installing Instance Tables

**To install instance tables:**

- 1 In **RM Manage**, select the instance for which you want to install tables.
- 2 Right-click the Instance and select **Install Instance Tables**.
- 3 Click **Yes** to confirm the installation.

## Dropping Instance Tables

**To drop instance tables:**

- 1 In **RM Manage**, select the instance for which you want to drop tables.
- 2 Right-click the Instance and select **Drop Instance Tables**.
- 3 Click **Yes** to confirm the deletion.

## Recreating Database Procedures

Use this function to ensure that you are using the most recent database procedures. For example, you may want to recreate database procedures after a compilation failure. Recreating the database procedures will synchronize them with the installed version of Dimensions RM.

### To recreate database procedures:

- 1 In **RM Manage**, select the instance for which you want to recreate the database procedures.
- 2 Right-click the Instance and select **Recreate Database Procedures**.
- 3 Click **Yes** to confirm the recreation.

## Recreating Database Indexes

Recreating database indexes increases Dimensions RM performance. This function rebuilds the database trees of Dimensions RM, which may become fragmented during use.

### To recreate database indexes:

- 1 In **RM Manage**, select the instance for which you want to recreate the database indexes.
- 2 Right-click the Instance and select **Recreate Database Indexes**.
- 3 Click **Yes** to confirm the recreation.

## Recreating Database Resources

You can recreate database resources if the database becomes damaged. This function verifies that a unique ID is assigned to the database resources.

### To recreate database resources:

- 1 In **RM Manage**, select the instance for which you want to recreate the database resources.
- 2 Right-click the Instance and select **Recreate Resources**.
- 3 Click **Yes** to confirm the recreation.

# Managing Users and Groups using RM Manage



## **NOTE User and Group Management**

The ability to define and manage User and Group Information can be accomplished in the RM User Interface by either System or Instance administrator. Please see the sections ["Managing Users" on page 506](#) and ["Managing Groups" on page 511](#).

## Updating User General Information for LDAP

You can update the general information for all users with the data specified on your LDAP server. To allow this, you must have set up RM to use LDAP.

### Configuring LDAP Attributes to match the environment

Ensure that the following criteria have been met:

- The LDAP server must have been specified (see chapter ["Specifying an LDAP Server" on page 785](#)).
- A valid LDAP configuration must have been specified (see chapter ["Specifying the LDAP Configuration" on page 786](#)).
- LDAP must have been specified as a login source (see chapter ["Specifying Login Sources in RM Manage" on page 780](#)).
- LDAP attributes must match your LDAP environment (see section ["Configuring LDAP Attributes to match the environment" on page 760](#)).

To allow RM using LDAP data, it is essential that RM knows the attributes used by your LDAP server. If your LDAP server uses the default LDAP setup, there is no need to configure the LDAP attributes. The following table shows the names of the RM attributes, the registry value for configuration and the default LDAP attribute names.

| RM Attribute | Registry Value         | Default LDAP Attribute        |
|--------------|------------------------|-------------------------------|
| First Name   | LDAP_ATTR_FIRST_NAME   | givenName                     |
| Last Name    | LDAP_ATTR_LAST_NAME    | sn                            |
| Phone        | LDAP_ATTR_PHONE        | telephoneNumber               |
| Fax          | LDAP_ATTR_FAX          | otherFacsimileTelephoneNumber |
| Email        | LDAP_ATTR_EMAIL        | mail                          |
| Pager        | LDAP_ATTR_PAGER        | pager                         |
| Location     | LDAP_ATTR_LOCATION     | location                      |
| Mobile Phone | LDAP_ATTR_MOBILE_PHONE | mobile                        |

**To configure the LDAP mapping, execute these steps:**

- 1 Open Windows Registry editor (select **Run**, enter `regedit` and click **OK**).
- 2 Navigate to  
`HKEY_LOCAL_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default`.
- 3 Right-click the **Default** key and select **New | String Value** from the shortcut menu.
- 4 Specify the LDAP registry value (e.g. `LDAP_ATTR_FIRST_NAME`) and press **Enter**.
- 5 Double-click the value you just created. This opens the **Edit String** dialog.
- 6 Enter the name of the LDAP attribute into the **Value data** box.
- 7 Click **OK**.
- 8 Repeat steps 3 - 7 for any other LDAP attributes you want to configure.
- 9 Once complete, exit RM Manage.

## Managing Security

This section consists of the following:

- ["Database Administrator Accounts" on page 761](#)
- ["Changing the Current RM Manage User" on page 767](#)
- ["Database Password Encryption" on page 768](#)

## Database Administrator Accounts

### Changing Passwords and Unlocking

The password for the Dimensions RM database accounts `ICDBA` and `ICADMIN` can be changed or unlocked from within RM Manage. The unlock function unlocks an account and enables the user.

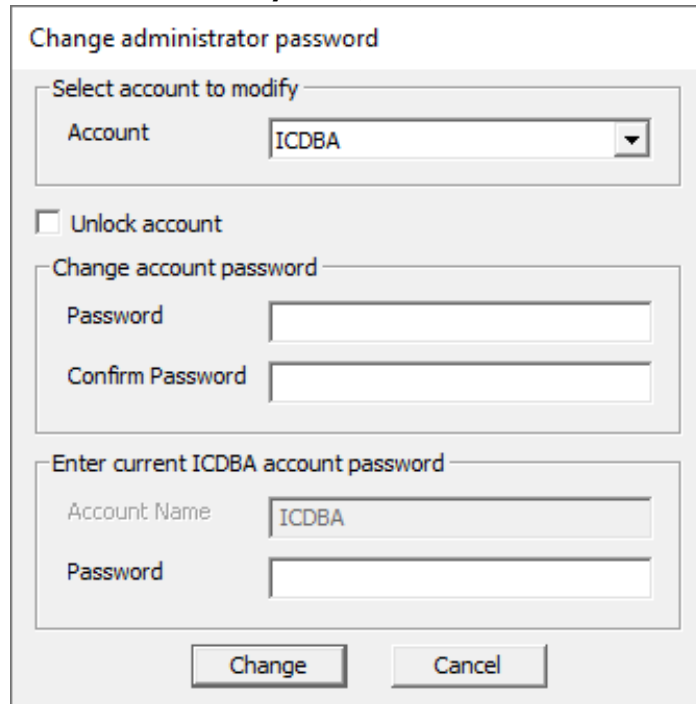
See also ["Changing the Database Instance Password" on page 734](#), ["Updating the Instance Password" on page 735](#), and ["Changing the Current RM Manage User" on page 767](#).

### *Changing the ICDBA Account Password*

#### To change the ICDBA account password:

- 1 Ensure that RM Manage is running with administrators permissions as you need write access to the `security.dat` file. If you are not sure if **RM Manage** is running with administrator permissions, do the following:
  - a Exit **RM Manage**.
  - b Right-click the **RM Manage** icon and select **Run as administrator** from the shortcut menu.

- c Depending on your configuration, you may need to click **Yes** to confirm the **User Access Control** dialog for **RM Manage**.
- 2 In **RM Manage**, select the database whose ICDBA account you want to change the password for.
- 3 Select **File | Change Administrator Password**, or right-click the database and select **Change Administrator Password**.
- 4 The **Change administrator password** dialog box opens.
- 5 In the **Select account to modify area**, select the ICDBA from the **Account** list.



- 6 In the **Change account password** area, type the new password for the ICDBA account.

**NOTE**

The password is case sensitive.

- 7 In the associated **Confirm Password** field, re-type the password.
- 8 In the **Enter current ICDBA account password** area, type the current ICDBA password into the **Password** box.

9 Click **Change**.



**IMPORTANT! Oracle Password Expiration**

For the Oracle RDBMS, Oracle account passwords expire by default after 180 days. Unless your DBA has re-configured such RDBMS to override this default and allow permanent passwords, you must to change the ICDBA password before 180 days elapse using the RM Manage **Change Administrator Password** menu item, see "[Database Administrator Accounts](#)" on page 761.

### Unlocking the ICDBA Account

To unlock the ICDBA account:

- 1 In **RM Manage**, select the database whose ICDBA account you want to unlock.
- 2 Select **File | Change Administrator Password**, or right-click the database and select **Change Administrator Password**.
- 3 The **Change administrator password** dialog box opens.
- 4 In the **Select account to modify area**, select the ICDBA account from the **Account** list.

- 5 Check the **Unlock account** check box. This will disable the **Password** and **Confirm Password** fields in the **Change account password** area.
- 6 In the **Enter SYSDBA account password** area, specify the user name of a database administrator (for Oracle: sys; for MS SQL Server: sa) and the associated password.
- 7 Click **Unlock**.

## Changing the ICADMIN Account Password

If the password of the ICADMIN account was changed in the database and not through RM Manage, please refer to chapter ["Updating the ICADMIN Password in Security.dat"](#) on page 765.

### To change the ICADMIN account password:

- 1 Ensure that **RM Manage** is running with administrators permissions as you need write access to the security.dat file. If you are not sure if **RM Manage** is running with administrator permissions, do the following:
  - a Exit **RM Manage**.
  - b Right-click the **RM Manage** icon and select **Run as administrator** from the shortcut menu.
  - c Depending on your configuration, you may need to click **Yes** to confirm the **User Access Control** dialog for **RM Manage**.
- 2 In **RM Manage**, select the database whose ICADMIN account you want to change the password for.
- 3 Select **File | Change Administrator Password**, or right-click the database and select **Change Administrator Password**.
- 4 The **Change administrator password** dialog box opens.
- 5 In the **Select account to modify area**, select the ICADMIN account the **Account** list.

Change administrator password

Select account to modify

Account ICADMIN

☐ Unlock account ☐ Apply DB password

Change account password

Password

Confirm Password

Enter ICDBA account password

Account Name ICDBA

Password

Change Cancel

- 6 In the **Change account password** area, type the new case sensitive password for the ICADMIN account.
- 7 In the associated **Confirm Password** field, re-type the password.
- 8 In the **Enter ICDBA account password** area, type the current ICDBA password.



9 Click **Change**.



**IMPORTANT! Oracle Password Expiration**

For the Oracle RDBMS, Oracle account passwords expire by default after 180 days. Unless your DBA has re-configured such RDBMS to override this default and allow permanent passwords, you must to change the ICDBA password before 180 days elapse using the RM Manage **Change Administrator Password** menu item, see ["Database Administrator Accounts"](#) on page 761.

***Updating the ICADMIN Password in Security.dat***

This section discusses how to update the ICADMIN password in `security.dat`, which can become necessary if the ICADMIN password was changed directly in the database. In this case, the password in the `security.dat` file must be updated to allow Dimensions RM to operate.

For changing the password of the ICADMIN account also in the database, see chapter ["Changing the ICADMIN Account Password"](#) on page 764.

**To update the ICADMIN account password in security.dat:**

- 1 Ensure that RM Manage is running with administrators permissions as you need write access to the `security.dat` file:
  - a Right-click the **RM Manage** icon and select **Run as administrator** from the shortcut menu.
  - b Depending on your configuration, you may need to click **Yes** to confirm the **User Access Control** dialog for **RM Manage**.
- 2 In **RM Manage**, select the database whose ICADMIN account password you want to update in the `security.dat` file.
- 3 Select **File | Change Administrator Password** or right-click the database and select **Change Administrator Password**.
- 4 The **Change administrator password** dialog box opens.

- 5 In the **Select account to modify area**, select the ICADMIN account the **Account** list.

- 6 Select the **Apply DB password** option. This disables the **Confirm password** box and the **Enter ICDBA account password** area.
- 7 In the **Change account password** area, type the new case sensitive password of the ICADMIN account.
- 8 Click **Change**.



#### **IMPORTANT! Oracle Password Expiration**

For the Oracle RDBMS, Oracle account passwords expire by default after 180 days. Unless your DBA has re-configured such RDBMS to override this default and allow permanent passwords, you must to change the ICDBA password before 180 days elapse using the RM Manage **Change Administrator Password** menu item, see "[Database Administrator Accounts](#)" on page 761.

### ***Unlocking the ICADMIN Account***

**To unlock the ICADMIN account:**

- 1 In **RM Manage**, select the database whose ICDBA account you want to unlock.
- 2 Select **File | Change Administrator Password**, or right-click the database and select **Change Administrator Password**.
- 3 The **Change administrator password** dialog box opens.

- 4 In the **Select account to modify area**, select the ICADMIN account from the **Account** list.

- 5 Check the **Unlock account** check box. This will disable the **Password** and **Confirm Password** fields in the **Change account password** area.
- 6 In the **Enter ICDBA account password** area, type the password of the ICDBA user into the **Password** box.
- 7 Click **Unlock**.

## Changing the Current RM Manage User

If the System Administrator has been logged in, through the creation of a new instance, as the database instance administrator they will need to **Change User** to their own login identifier.

**To change the current RM Manage logged in User:**

- 1 In **RM Manage**, select the database for which you want to change the user.
- 2 Right-click the database and select **Change User**.
- 3 Enter the User Name and Password for the System Administrator.

## Changing the Password for the Current RM User

**To change the password for the currently logged in System Administrator:**

- 1 Right-click the database and select **Change User Password**. The **Change user password** dialog box opens.
- 2 Enter your system administrator password and confirm.

- 3 Click **OK**.

## Database Password Encryption

As of release 25.2 (13), database passwords are encrypted by default using the AES encryption algorithm. Password encryption is no longer the responsibility of the System Administrator.

## Managing Databases

In the Dimensions RM environment, a database represents an instance of Oracle. The database can contain multiple Dimensions RM instances. The databases that are displayed are determined by the contents of the `tnsnames.ora` file.

Before you can access the instances contained in a database, you must first log on using a valid Dimensions RM user and password. Once you have been validated, the instances that you are able to administer will be available. The list of users and groups is defined once for a database and is shared across all instances contained within that database.

You can have any number of Dimensions RM instances in the your own company's database. When you create an instance, you can import data from a saved instance or create a "blank" instance. Dimensions RM allows you to choose the size of the tablespace datafile, which is a unit of storage where data is physically stored. You also can convert a database from a previous version of Dimensions RM.

## Logging onto a Database

**To log on to a database:**

- 1 In **RM Manage**, select a database or expand the database folder.  
The **Logon Information** dialog box opens.
- 2 Enter an System Administrator user name and password.
- 3 Click **OK**.

## Logging on as a Different User

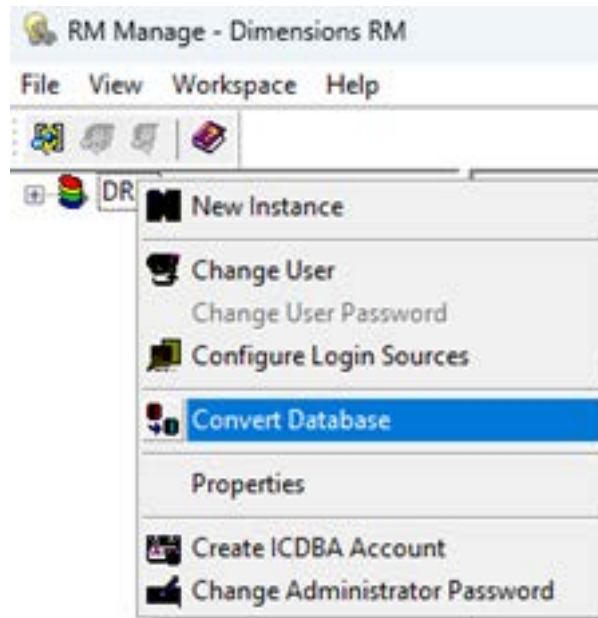
**To log on as a different user:**

- 1 In **RM Manage**, select the database to which you want to log on.
- 2 Select **File | Change User**, or right-click the database and select **Change User**.
- 3 Enter the new user name and password and click **OK**.

## Converting a Database or Instance

After upgrading the Dimensions RM release, the database and the instances contained within it must be converted. This should be done as part of the upgrade, and is described

in detail in the section **Convert (Upgrade) Database and Instances**, in the "Open Text Dimensions RM Installation Guide."



## Administering Tablespaces

A tablespace is a logical storage unit. Each instance is physically stored in one or more data files associated with a tablespace. Initially, only one file is associated with the tablespace, but you can add more files as you need them.

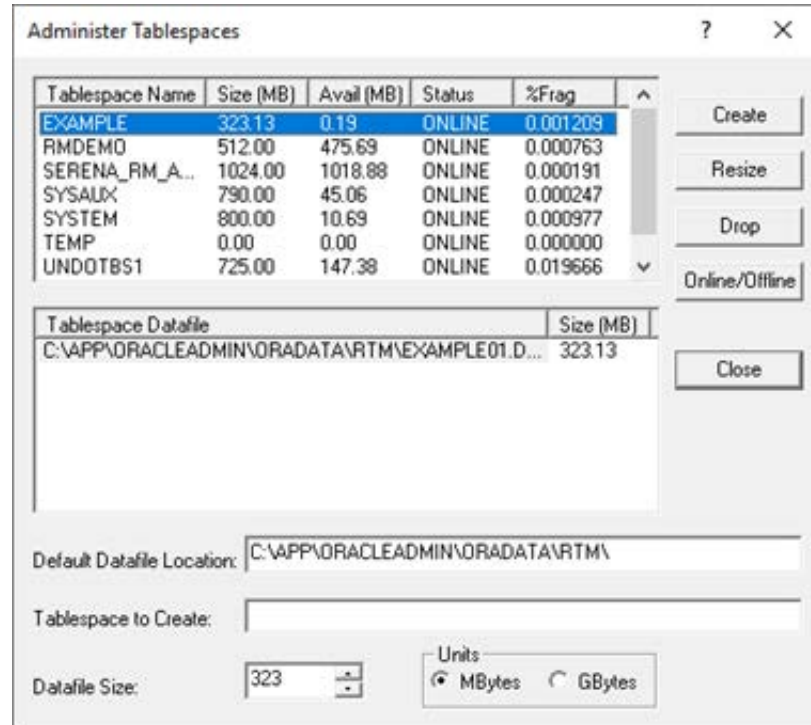
The size of the tablespace is determined by the size of the data file or combined data files that make up the tablespace.

### Creating a Tablespace

**To create a tablespace:**

- 1 In **RM Manage**, select the database in which you would like to create a tablespace.
- 2 Select **File | Administer Tablespaces** right-click the database and select **Administer Tablespaces**.
- 3 If prompted, enter the ICDBA password and click **OK**.

The **Administer Tablespaces** dialog box opens.



- 4 Enter a name in **Tablespace to Create** for the tablespace.
- 5 In the **Datafile Size** field, enter or select a datafile size.
- 6 Select a unit for the size. You can choose megabytes or gigabytes.
- 7 Click **Create**.

### ***Dropping a Tablespace***

When you drop a tablespace, the tablespace and all data in it are deleted.

#### **To drop a tablespace:**

- 1 In **RM Manage**, select the database in which you would like to drop a tablespace.
- 2 Select **File | Administer Tablespaces** right-click the database and select **Administer Tablespaces**.
- 3 If prompted, enter the ICDBA password and click **OK**. The **Administer Tablespaces** dialog opens.
- 4 Select the tablespace you want to drop from the top list.
- 5 Click **Drop**.
- 6 Click **Yes** to confirm the deletion when prompted.

### ***Resizing a Tablespace***

You can resize a tablespace when you are running low on available space. In general, you should consider increasing tablespace when available space is about 5 MB. How much you

resize the tablespace varies, depending how much work you intend to do, how much disk space is available, and at what stage you are in your instance.

**To resize a tablespace:**

- 1 In **RM Manage**, select the database in which you would like to resize a tablespace.
- 2 Select **File | Administer Tablespaces** right-click the database and select **Administer Tablespaces**.
- 3 If prompted, enter the ICDBA password and click **OK**. The **Administer Tablespaces** dialog box opens.
- 4 Select a tablespace in the top list.
- 5 If you want to resize an existing tablespace file, select the file in the bottom list. If you want to create another tablespace file, do not select anything in the bottom list.
- 6 Click **Resize**. You will be asked if you want to resize an existing tablespace file. Select **Yes** if you want to resize an existing tablespace file; otherwise a new tablespace file will be created.

***Placing a Tablespace Online or Offline***

**To place a tablespace online:**

- 1 In **RM Manage**, select the database which you would like to place online or offline.
- 2 Select **File | Administer Tablespaces** right-click the database and select **Administer Tablespaces..**
- 3 If prompted, enter the ICDBA password and click **OK**. The **Administer Tablespaces** dialog box opens.
- 4 Select an offline or online tablespace in the top list.
- 5 If you want to place the tablespace online, select the file in the bottom list. If you want to create another tablespace file, do not select anything in the bottom list.
- 6 Click **Online/Offline**.

***Setting Default Location for Tablespace***

**To set the default location for a tablespace:**

- 1 In **RM Manage**, select the database in which you would like to set a default tablespace location.
- 2 Select **File | Administer Tablespaces**, click the **Administer Tablespaces** button, or right-click and select **Administer Tablespaces**.
- 3 If prompted, enter the ICDBA password. The **Administer Tablespaces** dialog box opens.
- 4 Enter a location in the **Default Datafile Location** box.

## Configuring E-Mail Notification

The RM Mail service is designed to provide an automated mechanism for sending e-mail to registered users when a user-defined set or criteria is matched by an object in the database.

**UI Alerts:** Dimensions RM supports alerts delivered through UI settings. These notifications can be activated by the Instance Administrator, see ["Notification Settings" on page 89](#).

The functionality supporting e-mail notification is implemented in three different segments:

- **Mail Service**—At least one Windows machine on the network must be configured to run the RM Mail service. RM Mail monitors the selected instances and dispatches e-mails as the specified criteria are met. Note that a single instance of RM Mail can monitor multiple instances on multiple database locations.
- **RM Mail Configuration** —The system on which RM Mail is installed has a Windows applet used to configure the various aspects of the mail service.
- **Rule Configuration**—Instance administrators and users may configure notification and enable notification rules. See ["Managing Notifications" on page 531](#).



### NOTE

Some e-mail clients modify the formatting of incoming e-mail messages by removing what they consider "extra" formatting. To prevent this, disable the options in your e-mail client that cause this modification.

### To configure the RM Mail service:

- 1 Select **Programs | Open Text | Dimensions RM version | RM Mail Configuration** from the Windows **Start** menu. The RM Mail configuration applet starts.

The **RM Mail** dialog box has these tabs:

- **Database:** Used to select the database location and instances that the mail service should monitor (see ["RM E-MAIL Database Tab" on page 773](#)).
- **Mail Service:** Used to specify the name of the SMTP mail server to be used for sending mail, as well as the name and e-mail address from which the e-mail should be sent (see ["Mail Server Tab" on page 774](#)).
- **Control:** Used to start and stop the e-mail service, as well as specify the interval at which the service should run (see ["RM E-MAIL Control Tab" on page 775](#)).
- **Log:** Used to configure the amount of log information that is appended to the system application log (see ["RM E-MAIL Log Tab" on page 777](#)).
- **Notifications:** Used to inform administrators about administrative activities, e.g. creation of users or groups (see ["RM E-MAIL Notifications Tab" on page 777](#)).
- **General:** Used to specify the URL for RM Mail service (see ["RM E-MAIL Log Tab" on page 777](#)).

- 2 Specify RM mail settings.



3 Click **Apply**.

4 Stop and then restart the **Dimensions RM E-Mail Service** service.

This can be done from the following locations:

- RM Mail **Control** tab (see ["RM E-MAIL Control Tab" on page 775](#))
- Windows **Services** (from the Windows **Control Panel**, double-click **Administrative Tools** and then double-click **Services**).

## RM E-MAIL Database Tab

First, choose the database, if running RM Manage on the server, the database names should appear on the drop-down under Database Location.



In the check box next to each instance, select the instances this service should monitor. The mail service can monitor multiple instances at many locations.

**Disabling e-mail notifications for an instance does not delete the rules that have been defined for the instance. It simply informs the RM Mail service to ignore them.**



### NOTE

It is reasonable to disable notifications when performing very large update/import tasks so users are not inundate with email messages.

## Mail Server Tab

For the RM Mail service to send e-mail, it must have access to an SMTP mail server available on your network. For this and all client server communications, we recommend using TLS.

Fill the fields of the dialog as required or desired:

| Field                       | Description                                                                                                                                                                                                                              |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Server Name (SMTP):</b>  | The name or IP address of the SMTP server                                                                                                                                                                                                |
| <b>Server Port:</b>         | The port used for communication with the SMTP server; 25 is the default.                                                                                                                                                                 |
| <b>Use TLS:</b>             | If enabled, TLS security will be used. For secure communication, TLS is recommended.                                                                                                                                                     |
| <b>Use Authentication:</b>  | Enable this option, if the SMTP server requires a user name and password.                                                                                                                                                                |
| <b>Authentication Mode:</b> | The authentication mode depends on the SMTP server. <ul style="list-style-type: none"> <li>■ <b>Login:</b> Transmits user name and password individually.</li> <li>■ <b>Plain:</b> Transmits user name and password together.</li> </ul> |
| <b>Login:</b>               | A user name that is accepted by the SMTP server.                                                                                                                                                                                         |

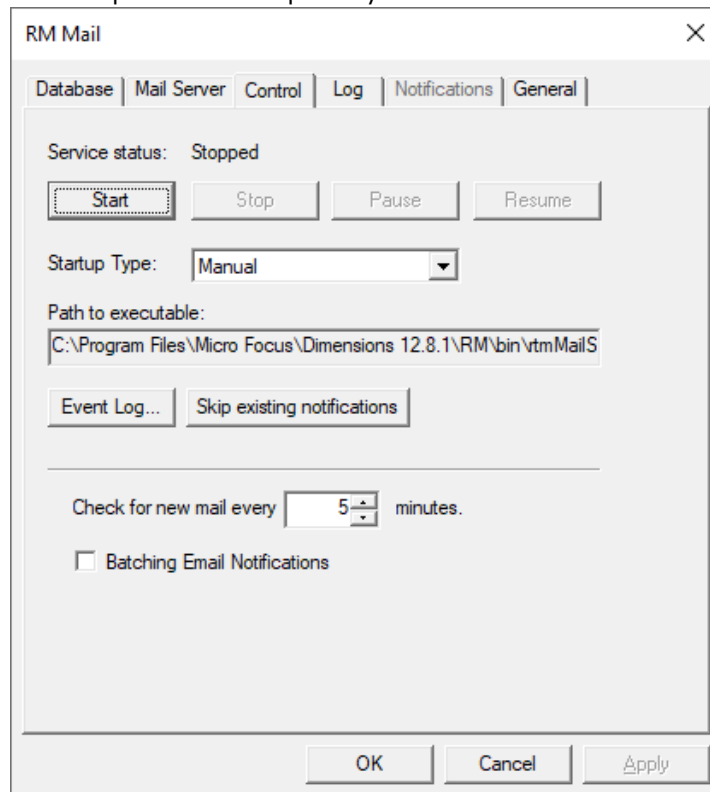
| Field                  | Description                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Password:</b>       | The password for the SMTP user name.                                                                                                                      |
| <b>Name:</b>           | Specify the name you want users to see as the sender's name, e.g. <i>Dimensions RM Administrator</i> . If replies are not wanted, leave this field blank. |
| <b>E-Mail Address:</b> | Specify the e-mail address you want users to be able to reply to. If replies are not wanted, leave this field blank.                                      |

**To test your configuration, do the following:**

- 1 Click **Send test email**. This opens the **Send Test Email** dialog.
- 2 Enter an e-mail address to which the test e-mail will be sent.
- 3 Click **OK** to send the test e-mail.

## RM E-MAIL Control Tab

The control tab provides a simple way to control the status of the RM Mail service.



The current status of the service is displayed at the top of the dialog box.

To save changes made to the configuration before starting the RM Mail service, click **Apply**. To start the service, click **Start**. To stop the service, click **Stop**.

The **Startup Type** drop-down list provides three options:

- **Automatic**—The service is started automatically at system boot time.

- **Manual**—The user must start the service manually, either from the RTM Mail Configuration applet or the Services applet on the control panel.
- **Disabled**—The service cannot be started either automatically or manually.

**NOTE**

The service can also started and stopped from Windows **Services** (from the Windows **Control Panel**, double-click **Administrative Tools**, and then double-click **Services**).

The interval at which the mail service should process the e-mail rules can be selected by changing the value for the **Check for New E-mail** field. The default value for this field is 5 minutes, although the actual value used depends on the number of changes being made to the instance data and maximum acceptable delay between a change occurring and the e-mail being sent. Generally, the more operations that are being performed on the data, the shorter the interval should be.

### ***Removing Unsent E-Mail Notifications from the Mailing Queue***

If the RM Mail service has been disabled for a long time and the e-mail notifications were still active, or you just disabled RM Mail service and e-mail notifications, you should remove unsent e-mail notifications from the mailing queue. This prevents that when you reactivate the RM Mail service old notification e-mails are sent to users.

#### **To remove unsent e-mail notifications, do the following:**

- 1 Ensure that on the **Database** tab, database and at least one instance have been selected.
- 2 On the **Control** tab, click **Skip existing notifications**.
- 3 Confirm the warning message by clicking **OK**.
- 4 Click **OK** to close the success message.

### ***Combining Notifications into a Single E-Mail***

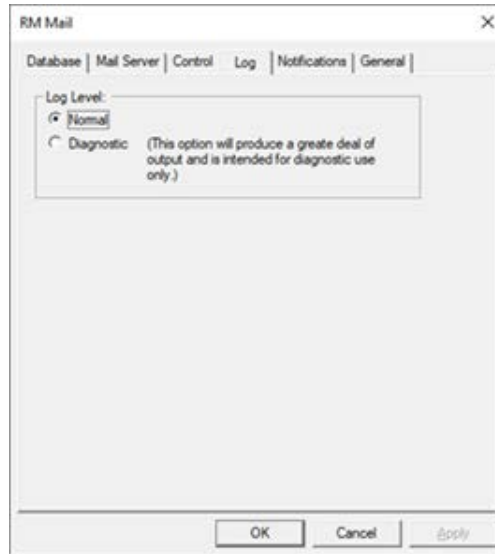
In order to remove stress from the mail server and avoid users to receive a lot of notification e-mails, all user notifications for the same class can be combined into a single e-mail. To increase the chance to combine notifications into one e-mail, ensure that the value of the **Check for new mail every ... minutes** is not too small.

#### **To combine notifications into one e-mail, do the following:**

- 1 Ensure that on the **Database** tab, database and at least one instance have been selected.
- 2 On the **Control** tab, select **Batching Email notifications**.
- 3 Set the value for **Check for new mail every ... minutes** to a convenient value. For receiving one combined e-mail per day, set the value to 1440.
- 4 Click **Apply** to accept your changes.
- 5 Restart the RM Mail service by clicking **Stop**, followed by **Start**.

## RM E-MAIL Log Tab

The RM Mail service writes information to the system application log to inform the user of events that have happened. The **Log** tab allows you to specify the log level.

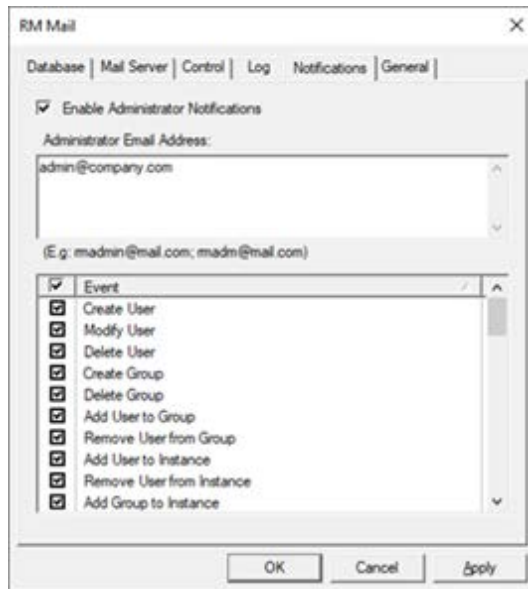


The default log level is **Normal**, which logs a minimum of information to the system application log and is the recommended option for normal use.

The **Diagnostic** option helps locate problems that might occur and logs every operation that the RM Mail service performs. This generates much information in the system application log, which could fill the log. When running in verbose mode, it is recommended that the application log be configured to overwrite older events to avoid generating warning messages by the operating system.

## RM E-MAIL Notifications Tab

Please Note that notifications should be created by the Instance Administrator see ["Managing Notifications" on page 531](#).



The following options are available:

- **Enable Administrator Notifications:** Enables the function to send e-mails when system events occur.
- **Administrator Email Address:** Enter the e-mail address to which you want to send the notifications to. If you want to specify several e-mail addresses, separate them with a semicolon.
- **Event:** Select the events for which you want to receive notifications. By default, all events are subscribed. You can toggle subscription for all events by clicking the check box on the table header.

## RM E-MAIL General Tab

The **General** tab is used to specify the RM URL for RM Mail service.



# Login Sources

Dimensions RM supports multiple login sources, including:

**LDAP:** Lightweight Directory Access Protocol. Use this source to authenticate user IDs and passwords against an LDAP server.

**SSO:** Single Sign On. Use this source to authenticate users against a Open Text SSO server (the Open Text SSO server is an optional part of Dimensions CM and SBM installations, not a part of Dimensions RM). SSO streamlines login across the products and within RM. It also enables CAC (Common Access Card) authentication.



## NOTE

Before you can use SSO with your RM clients, you must configure the RM server to connect to the Open Text SSO server. See the *Dimensions RM Installation Guide*.

**RM:** Use this source to authenticate user IDs and passwords that are stored in Dimensions RM.

**AZURE AD:** Azure Active Directory allows organizations to verify user accounts against Microsoft's cloud based directory and identity management service. This is especially useful if you want to grant access to Dimensions RM for users outside your corporate domain.

**SAML SSO:** Security Assertion Markup Language (SAML) enables organizations to verify user accounts using the SAML authentication standard.

**Multiple Login Sources:** It is possible to specify multiple login sources, and to specify the order in which they should be used. If multiple sources are specified and the first login attempt fails because the user is not found, Dimensions RM looks for the user in the next enabled source. For the LDAP source, you can specify multiple LDAP servers and their order. A new Dimensions RM user can be automatically created after a user has been authenticated against LDAP or SSO, if so configured.



## NOTE Multiple Login Sources

If the login fails due to an invalid password, no attempt is made to authenticate against the next login source.



**IMPORTANT!** Each user ID is valid for only ONE login source.

- To allow a user the ability to login from two different login sources, you must create two unique user IDs for that user, one for each login source. For example: JohnS\_sso and JohnS\_ldap.
- Once a user ID is created, the login source associated with it cannot be changed. If you manually create a user ID with RM Manage, that user ID will only work with the RM login source. If a user ID is auto created in RM by an external login source (LDAP or SSO), that user ID will only work with the login source that created it.

The following steps describe the process that takes place when LDAP is used as a login source:



**NOTE**

The group and instance to be associated with new users must be set up before configuring LDAP as a login source.

- 1 The user's credentials are authenticated against the LDAP server.
- 2 The user's LDAP user name is used to log the user into Dimensions RM. If a password is stored for the user in Dimensions RM, it is ignored.
- 3 If the user does not already exist in Dimensions RM, the user is created using specified criteria (this is optional).

## Specifying Login Sources in RM Manage

You can specify multiple login sources, or just one. You can also change the order in which the sources are used to authenticate users.



**NOTE**

Deselecting the SSO login source does not disable the configuration changes that were made during the installation of the SSO components. See ["Fully Disabling SSO" on page 784](#).

**To specify login sources:**

- 1 In **RM Manage**, select the database for which you want to set login sources.
- 2 Select **File | Configure Login Sources**, or right-click the database and select **Configure Login Sources**.



- 3 Enter the password for the ICDBA account if prompted to do so. The **Configure Login Sources** dialog box opens.

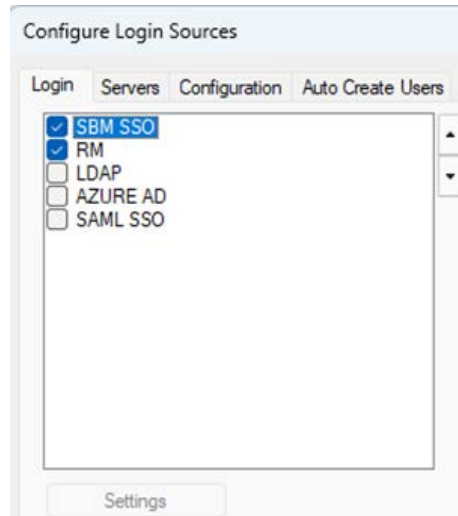


**Figure 15-2. Attempt authenticated first using SBM SSO, and then RM**

- 4 Select the login sources that you want Dimensions RM to use.
- 5 Use the up and down arrow buttons to change the order of the sources. The order that you define here is the order in which Dimensions RM attempts to authenticate users.



**IMPORTANT! Each user ID is valid for only ONE login source.**

- To allow a user the ability to login from two different login sources, you must create two unique user IDs for that user, one for each login source. For example: JohnS\_sso and JohnS\_ldap.
- Once a user ID is created, the login source associated with it cannot be changed. If you manually create a user ID with RM Manage, that user ID will only work with the RM login source. If a user ID is auto created in RM by an external login source (LDAP or SSO), that user ID will only work with the login source that created it.

- 6 If you selected...
  - **RM:** If you did not select any other login source, click **OK**.
  - **LDAP:** Proceed to ["Specifying an LDAP Server" on page 785](#).
  - **SSO:** Note that before you can use SSO with your RM clients, you must configure the RM server to connect to the Open Text SSO server. See the *Dimensions RM Installation Guide*. To automatically create users on their first SSO login, see chapter ["Creating RM Users Automatically" on page 782](#).
  - **AZURE AD:** ["Retrieving Configuration Data from Azure AD" on page 912](#)
  - **SAML SSO:** ["Azure SAML2 Authentication" on page 915](#)

## Creating RM Users Automatically

Optionally, you can specify whether RM users are automatically created when a new SSO or LDAP authenticated user logs in.



### NOTE

Before you can use SSO with your RM clients, you must configure the RM server to connect to the Open Text SSO server. See the *Dimensions RM Installation Guide*.

- 1 If the **Configure Login Sources** dialog box is not already open, do the following:
  - a In **RM Manage**, select the database for which you want to configure SSO.
  - b Right-click the database and select **Configure Login Sources**.
  - c Enter the password for the ICDBA account if prompted to do so.

The **Configure Login Sources** dialog box opens.

- 2 Select the **Auto Create Users** tab.

The screenshot shows the 'Configure Login Sources' dialog box with the 'Auto Create Users' tab selected. The 'Instance' dropdown is set to 'RMDEMO'. The 'Assign users to groups' section contains a table with the following data:

|                                     | Group Name       | External Group     | Assign to Category                  |
|-------------------------------------|------------------|--------------------|-------------------------------------|
| <input type="checkbox"/>            | Administrators   |                    | <input type="checkbox"/>            |
| <input checked="" type="checkbox"/> | BUSINESS_ANALYST | RM_BusinessAnalyst | <input checked="" type="checkbox"/> |
| <input type="checkbox"/>            | icDemo Users     |                    | <input type="checkbox"/>            |
| <input type="checkbox"/>            | MANAGER          |                    | <input type="checkbox"/>            |

At the bottom of the dialog are buttons for 'OK', 'Cancel', and 'Help'.

- 3 **Auto create users for LDAP/SSO login:** Select this option to automatically create user IDs in Dimensions RM for users authenticated through SSO or LDAP.
- 4 **Get user group from attribute:** Select this option to specify an LDAP attribute that provides the group(s) to assign the user to when creating the account.
- 5 **Map external group to RM group:** Select this option if the LDAP groups differ from the groups in Dimensions RM. This shows the **External Group** column in the **Assign users to groups** table.
- 6 **Instance:** Select the instance to which you want to assign the automatically created user.
- 7 **Assign users to groups:**
  - Select the option left of the group name to assign an automatically created user to this group.
  - **External Group:** This column is only available if you selected the **Map external group to RM group** option. To specify an external group, double-click into the column and specify one or several group names. You can separate group names with a semicolon. You can either use the display name of a group, e.g. *RM\_BusinessAnalyst*, or the full name, e.g. *CN=RM\_BusinessAnalyst,OU=Sales,DC=mydomain,DC=com*. The full name should be used if the groups are ambiguous.

**CAUTION!**

Group assignments are synchronized at login. This means that if a user has been manually removed from a group, he will be added again if he is assigned to that group in LDAP.

- **Assign to Categories:** By selecting the option in this column, the user is assigned to all categories to which this group has access. If this option is clear, users must be assigned manually. For details, see ["Managing Categories" on page 517](#).
- 8 Click **OK**.

## Changing the SSO Provider Host Name

If your SSO installation is moved to another host, you need to change the SSO configuration files to be able to log on to Dimensions RM.

**To change the SSO provider host name, follow these steps:**

- 1 Change the redirection of web client login:
  - a On the RM server, open the following file in a text editor:  
`RM_Install\Common Tools \#. #\tomcat\#. #\alfssogatekeeper\conf\gatekeeper-core-config.xml`
  - b Change protocol (http or https), host name and port to match the new server connection for the parameter tags with these names:
    - SecurityTokenService
    - SecurityTokenServiceExternal
    - FederationServerURL

- c Save the file.
  - d Restart **Dimensions RM Common Tomcat** service.
- 2 On systems using remote fat clients to access the RM server via SSO do the following:
  - a Open a registry editing application (select **Run**, enter `regedit`, and click **OK**).
  - b Navigate to one of the following:  
`HKEY_LOCAL_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default`
  - c Change Registry value **SSOServer** to match protocol, host name and port of the new connection.
  - d Change Registry value **SSO\_HOST** to match the new SSO host name.
  - e Change Registry value **SSO\_PORT** to match the new SSO port.

**NOTE**

After changing the SSO host name it might become necessary to import the certificate with the new host name. For more information about importing refer to chapter "SSO and CAC Configuration" in the *Dimensions RM Installation Guide*.

## Fully Disabling SSO

When you install the Single Sign On (SSO) components, changes are made to certain configuration files and registry entries. Deselecting the SSO login source in the Configure Login Sources dialog does not undo the configuration changes that were made during installation of the SSO components.

**To disable SSO follow these steps:**

- 1 Deselect the **SSO** login source via the Configure Login Sources dialog. See ["Specifying Login Sources in RM Manage" on page 780](#).
- 2 Disable the redirection of web client login:
  - a On the RM server, open the following file in a text editor:  
`RM_Install\Common Tools`  
`#. #\tomcat\#. #\conf\alfssogatekeeper\conf\`  
`gatekeeper-services-config.xml`
  - b Comment out all lines where the **requestURI** attribute contains `/rtmBrowser/`. Examples:
    - `<URIMatcher requestURI="/rtmBrowser/*"/>`
    - `<URIMatcher requestURI="/rtmBrowser/css/*"/>`

**NOTE**

To comment out an XML section, use the `<!--` and `-->` statements, for Example: `<!--<URIMatcher requestURI="/rtmBrowser/*"/>-->`

- c Save the file.
  - d Restart **Dimensions RM Common Tomcat** service.
- 3** Remove the SSO registry key on systems using remote fat clients to access the RM server via SSO:
- a Open a registry editing application (select **Run**, enter `regedit`, and click **OK**).
  - b Navigate to one of the following:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default
  - c Delete the **SSOserver** key.

**TIP**

Make a note of the registry key and its value in case you want to restore it in the future.

- d Close the registry tool.
- 4** Restart the RM server.

## Specifying an LDAP Server

If you plan to use LDAP as a login source, you must specify one or more LDAP servers.

### To specify an LDAP server:

- 1** If the **Configure Login Sources** dialog box is not already open, do the following:
  - a In **RM Manage**, select the database for which you want to specify an LDAP server.
  - b Right-click the database and select **Configure Login Sources**.
  - c Enter the password for the ICDBA account if prompted to do so.  
The **Configure Login Sources** dialog box opens.
- 2** Click the **Servers** tab.
- 3** To add a server to the **LDAP Servers** list, complete the following fields:
  - a **Server Name:** Enter the host name or IP address of the LDAP server. For example, `myserver.mydomain.com`
  - b **Server Port:** Enter the port number of the LDAP server. LDAP servers are typically configured to use port 389 (no Secure Socket Layer (SSL)) or 636 (SSL).

- c **Add:** Click to add the server to the **LDAP Servers** list.



**NOTE**

If you are using redundant servers, add each server to the list. If you are using referrals to search among unique servers, only one server is needed in the list.

- 4 Select a server in the **LDAP Servers** list and do any of the following:
- To reposition the selected server in the LDAP Servers list, click the up or down arrow button. Dimensions RM searches for login authorization starting from the top of this list.
  - To delete the selected server from the list, click **Delete**.
  - To test the connection to the selected server, click **Test**.
- 5 Proceed to ["Specifying the LDAP Configuration,"](#) next.

## Specifying the LDAP Configuration

If you are using LDAP as a login source, you must specify an LDAP configuration.

**To specify an LDAP configuration:**

- 1 If the **Configure Login Sources** dialog box is not already open, do the following:
  - a In **RM Manage**, select the database for which you want to specify an LDAP server.
  - b Right-click the database and select **Configure Login Sources**.
  - c Enter the password for the ICDBA account if prompted to do so.The **Configure Login Sources** dialog box opens.

- 2 Click the **Configuration** tab.

The screenshot shows the 'Configure Login Sources' dialog box with the 'Configuration' tab selected. The dialog has four tabs: 'Login', 'Servers', 'Configuration', and 'Auto Create Users'. The 'Configuration' tab contains the following settings:

- ☐ Use SSL (Secure Socket Layer)
- ☒ Follow Referrals
- Base User Context:
- User Naming Attribute:
- ☐ Bind Anonymously
- User DN:
- Password:
- Connection Timeout:  seconds

- 3 To enable Secure Socket Layer, select the **Use SSL (Secure Socket Layer)** check box.
- 4 To allow Dimensions RM to follow referrals from one LDAP server to another, select the **Follow Referrals** check box. Use this feature to support properly configured non-redundant distributed servers.
- 5 In the **Base User Context** field, specify the base user context (distinguished name). This is the base from which to search for users. Depending on your Active Directory configuration, you might need to do the following:
- **All users are within the same organizational unit (OU):** Specify the whole path, e.g. *OU=Marketing,CN=mydomain,CN=com*. In this case, the **Follow Referrals** option should be turned off.
  - **Users are in different organizational units (OU):** Specify the highest possible path, e.g. *CN=mydomain,CN=com* and select the **Follow Referrals** option.
- 6 In the **User Naming Attribute** field, specify the user naming attribute. This is the attribute in which the LDAP server holds the user ID value. You can use the following values:
- **For all users identified by Base User Context:** `sAMAccountName`
  - **For users of a certain group:**  
`(&(sAMAccountName={%s})(memberOf=CN=MyGroup,OU=Builtin,DC=mydomain,DC=com))`

Modify `CN=MyGroup,OU=Builtin,DC=mydomain,DC=com` to match the full group path in your Active Directory.

- 7 Select a method for querying the LDAP server to retrieve the list of users:
  - To query anonymously, select the **Bind Anonymously** check box. This requires that the LDAP server is configured to allow anonymous users to retrieve a list of users and attributes.



**NOTE**

**With the default configuration of Active Directory,** you cannot bind anonymously to a Microsoft Active Directory Server.

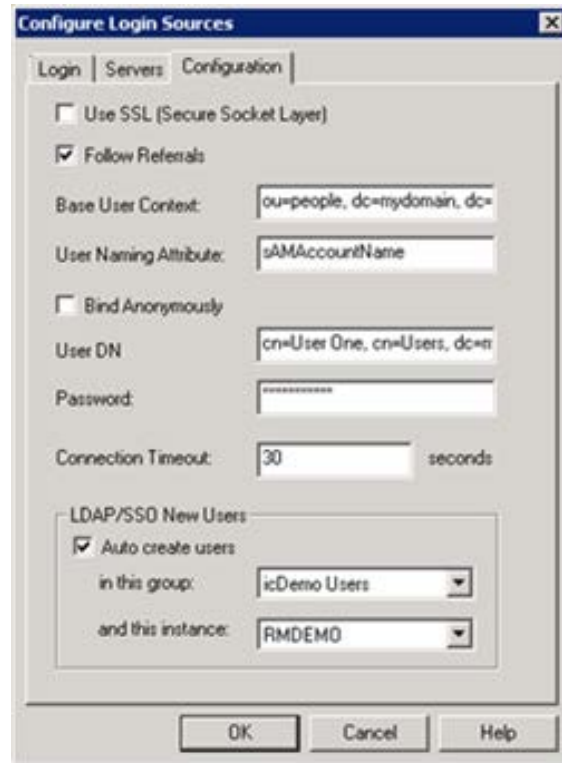
The **User DN** and **Password** fields are disabled if the **Bind Anonymously** check box is selected.

- To require a user ID and password for queries:
    - a In the **User DN** field, specify a full user DN.
    - b In the **Password** field, specify a user password.
- 8 To set the idle time in seconds before the connection to the LDAP server times out, enter a value in the **Connection Timeout** field.
- 9 To automatically create user IDs in Dimensions RM for users authenticated through LDAP, see chapter ["Creating RM Users Automatically" on page 782](#).
- 10 Click **OK**.



## Example LDAP Configuration

The following illustration follows shows a typical non-SSL LDAP configuration for Microsoft Active Directory Server.



The full content of fields that are truncated in the illustration follows:

- **Base User Context**—ou=people, dc=mydomain, dc=com
- **User DN**—cn=User One, cn=Users, dc=mydomain, dc=com



### TIP

**TIP** By using an LDAP browser, you can retrieve the values for **Base User Context**, **User DN** and **User Naming Attribute**. If you can log on to the LDAP server, you can use ldp.exe.

## Using Several LDAP Servers with Dimensions RM

Dimensions RM allows you to authenticate against several LDAP servers. This allows access of users of different domains/forests to the same Dimensions RM server.



### IMPORTANT!

- All configured server names must be unique.
- If identical user names exist on several servers, the first server having this user name is used for authentication.

### For using several LDAP servers, do the following:

- 1 Execute the steps to configure a single LDAP server (see chapter ["Specifying the LDAP Configuration" on page 786](#)).
- 2 Specify the related LDAP servers in RM Manage (see chapter ["Specifying an LDAP Server" on page 785](#)).
- 3 With a text editor (e.g. Notepad), create the following file:  
*RM\_Install\conf\ldap.conf*.
- 4 For each LDAP server, do the following:
  - a Specify the full server name (the server you already configured in RM Manage), surrounded by square brackets, e.g. [ldap.server1.com]
  - b Specify the settings (one setting per line). The following configuration for 2 servers is for reference only.

```
[ldap.server1.com]
USE_SSL=1
FOLLOW_REFERRALS=0
BASE_USER_CONTEXT=OU=Users,DC=server1,DC=com
USER_NAMING_ATTRIBUTE=sAMAccountName
BIND_ANONYMOUSLY=0
USER_DN=ldapquery
USER_PASSWORD=password

[ldap.server2.com]
USE_SSL=1
FOLLOW_REFERRALS=0
BASE_USER_CONTEXT=OU=Users,DC=server2,DC=com
USER_NAMING_ATTRIBUTE=sAMAccountName
BIND_ANONYMOUSLY=0
```

```
USER_DN=ldapquery
USER_PASSWORD=password
```

**NOTE**

The settings match those on the **Configuration** tab of the **Configure Login Sources** dialog in RM Manage.

- **USE\_SSL: Use SSL (Secure Socket Layer).** To enable, set 1; to disable set 0.
- **FOLLOW\_REFERRALS: Follow Referrals.** To enable, set 1; to disable set 0.
- **USER\_NAMING\_ATTRIBUTE: User Naming Attribute**
- **BIND\_ANONYMOUSLY: Bind Anonymously.** To enable, set 1; to disable set 0.
- **USER\_DN: User DN**
- **USER\_PASSWORD: Password**

For reference of the above settings, refer to chapter ["Specifying the LDAP Configuration" on page 786](#).

5 Save the file.

## Configuring LDAP to Use SSL

If your LDAP server is configured to use Secure Sockets Layer (SSL), but there is not a certificate database in the LDAP\_Certificates\_Directory or the database is missing the required SSL certificates, you will receive errors, such as:

```
"Failed to connect to LDAP server." or "You cannot access this
project because your login account, UserName, is invalid. . . ."
```

### Importing Certificates

In order to use SSL you need to import a public key certificate to the Trusted Root Certification Authorities on the server which runs Dimensions RM.



#### **IMPORTANT! Certificate Requirements**

- **The *Subject* field** must include the fully qualified name to the LDAP server (e.g. myldapserver.mydomain.com).
- **The *Enhanced Key Usage* (EKU) field** must contain the *Server Auth* value. If the field contains *<All>*, it cannot be used for server authentication.
- **The certificate** must be issued from a trusted Certificate Authority, within the scope of the LDAP server or within the domain of the LDAP server.
- **The certificate** is valid (current date is within range of the date in the *Valid from* and *Valid to* fields).

#### **To import the certificate, follow these steps:**

- 1 Double-click the certificate file.
- 2 On the **General** tab, click **Install Certificate...** which opens the **Certificate Import Wizard**.
- 3 Click **Next**.
- 4 Select the **Place all certificates in the following store** option.
- 5 Click **Browse...**
- 6 Select **Trusted Root Certification Authorities**.
- 7 Click **OK**.
- 8 Click **Next**.
- 9 Click **Finish**.

#### **Enabling SSL**

##### **To create and populate a certificate database follow these steps:**

- 1 Start RM Manage and login into the appropriate database.
- 2 Open the **Configure Login Sources** dialog box as follows:
  - a Select the database for which you want to specify an LDAP server.
  - b Select **File | Configure Login Sources**, or right-click the database and select **Configure Login Sources**.
  - c Enter the password for the ICDBA account if prompted to do so.  
The **Configure Login Sources** dialog box opens.
- 3 Select **LDAP** as a Login Source.
- 4 Select the **LDAP Servers** tab.

- 5 For the new LDAP server, enter the appropriate details in the **Server Name** and **Server Port** fields. The default port for SSL is 636.

**NOTE**

You **must** use the fully qualified server name (e.g. myldapserver.mydomain.com).

If your RM server cannot resolve the name, enter the IP address and name into the hosts file (C:\Windows\system32\drivers\etc\hosts).

**TIP**

To check if your server can resolve the LDAP server name, follow these steps:

- 1 Open a command prompt.
- 2 Enter `tracert` followed by the fully qualified server name (e.g. `tracert myldapserver.mydomain.com`).
- 3 Hit Enter.

If the `tracert` command returns **Unable to resolve target system name** followed by the server name you entered, you must modify the hosts file as described above.

- 4 Click **Apply**.
- 5 Select the **LDAP Configuration** tab.
- 6 Check the **Use SSL (Secure Socket Layer)** check-box, and fill in the other data as needed for your site (see ["Specifying the LDAP Configuration" on page 786](#)).
- 7 Click **OK** to update the information within your RM instances database.
- 8 Select the **LDAP Servers** tab.
- 9 Click **Test**. You should receive the message **LDAP Test Connection successful**.
- 10 LDAP is now configured to use SSL.

## Using Two-Factor Authentication For Logins

Dimensions RM supports two-factor authentication for log-in with the RM login source. Two-factor authentication has been tested with the following apps:

- NetIQ Advanced Authenticator app
- Google Authenticator
- Microsoft Authenticator app

**To enable two-factor authentication for accounts with the RM login source, do the following:**

- 1 Open the **Login Sources** dialog (see ["Specifying Login Sources in RM Manage" on page 780](#)).
- 2 Select the **RM** login source.
- 3 Click **Settings**. This opens the **RM Login Settings** dialog.
- 4 Select **Enable two factor authentication (TOTP 2FA)**.
- 5 Click **OK** to close the **RM Login Settings** dialog.
- 6 Click **OK** to close the **Login Sources** dialog.

**NOTE**

- For existing **RM** login source users, it is recommended to select the **User Must Change Password at Next Logon** option. For details, see ["Managing Users" on page 506](#).

## Setting Up Password Security

Password security is set in the **Password Rules Settings** tab that can be accessed in the instance view.

### Setting Password Rules

Password rules are common to all user accounts. Any changes made to password settings affect all user accounts.

**NOTE**

- Password rules only apply to RM user accounts (RM Login Source) for which the **Password Never Expires** option is **not selected**.
- Password rules *do not* apply to RM access using LDAP/SSO accounts.
- Password rules apply to RM databases, not to individual instances.
- Whenever a new user is created, the default password is `rtm`.

**To set password rules for all user accounts:**

- 1 In **RM Manage**, select **View | Instances**.
- 2 Click the **Password Rules Settings** tab.

**3** Provide entries for the following settings:

| Setting                                             | Description                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eMail account for notifications                     | The e-mail address of the administrator for users who want to contact the administrator when their account is locked.                                                                                                                                                                                                                                  |
| Minimum number of characters to be changed          | The minimum number of characters that users must change in their old password when creating a new one. The maximum number for this setting is 99.<br><b>NOTE</b> When you reset the password for an existing user, this setting is not validated.                                                                                                      |
| Minimum number of digits                            | The minimum number of digits that a password must contain. The maximum number for this setting is 99.                                                                                                                                                                                                                                                  |
| Minimum number of letters                           | The minimum number of letters that a password must contain. The maximum number for this setting is 99.                                                                                                                                                                                                                                                 |
| Minimum number of uppercase letters                 | The minimum number of uppercase letters that a password must contain. The maximum number for this setting is 99.                                                                                                                                                                                                                                       |
| Minimum number of lowercase letters                 | The minimum number of lowercase letters that a password must contain. The maximum number for this setting is 99.                                                                                                                                                                                                                                       |
| Minimum number of special characters                | The minimum number of special characters that a password must contain. The following special characters are allowed:<br><br><div style="text-align: center;"> !   "   #   \$   %   &amp;   '   (   )   *<br/> +   ,   -   _   /   :   ;   &lt;   =   &gt;<br/> ?   [   \   ]   ^   {       }   ~   ` </div> The maximum number for this setting is 99. |
| Minimum length of password                          | The minimum number of digits, letters, and special characters that the password must contain, based on the previous five settings. The maximum number for this setting is 99.                                                                                                                                                                          |
| Minimum number of failed logins before auto disable | This is the number of allowable attempts with the wrong password before the account is locked. The maximum number for this setting is 99.                                                                                                                                                                                                              |
| Password expiration days                            | The number of days until users must change their password. The maximum number for this setting is 9999.                                                                                                                                                                                                                                                |
| Number of days before password expiry warning       | The number of days before a password is due to expire, when users are notified of the pending expiration date and given the opportunity to change their password. A warning message is displayed every time users log in using any Dimensions RM tool. The maximum number for this setting is 999.                                                     |

| Setting                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of previous passwords (history) to be stored           | The number of passwords to be stored for each user. Users will not be allowed to reuse any of these passwords. The maximum number for this setting is 9999.                                                                                                                                                                                                                                                                                                                                                       |
| Number of days to store previous passwords (history)          | The number of days to store any previously used passwords. When the limit is reached, the stored passwords are deleted. The maximum number for this setting is 9999.                                                                                                                                                                                                                                                                                                                                              |
| Start date to apply password rules for on-expiring passwords. | <p>By default, unless changed as described below, password rules for non-expiring passwords will be enforced starting on 31-DEC-2099. If you do not wish for this to occur, uncheck the associated tick mark.</p> <p>Alternatively, to assign an alternative date for password rules to be enforced, either:</p> <ul style="list-style-type: none"><li>• select and overtype, as appropriate, the day, month, and year; or</li><li>• click the down-arrow and use the calendar dialog box that appears.</li></ul> |

- 4 Click **Accept Changes**.

## Integration Between Dimensions CM and Dimensions RM

The integration between Dimensions CM and Dimensions RM allows users to associate Dimensions RM requirements to Dimensions CM requests.

The integration enables you to manage Dimensions RM requirements in Dimensions CM and, conversely, manage Dimensions CM requests in Dimensions RM. For example, when you add a requirement to or remove a requirement from a Dimensions RM container, Dimensions CM is notified with the relevant information; also, Dimensions RM baselines flow to Dimensions CM and Dimensions CM baselines flow to Dimensions RM.

In the context of an ntegration, you can:

- Associate Dimensions RM instances a Dimensions CM products.
- Associate Dimensions RM containers (baselines or collections only) to Dimensions CM instances/streams.

See the common *Dimensions CM-Dimensions RM Integration Guide* for details.

## Logging In to a Dimensions CM Server

See the common *Dimensions CM-Dimensions RM Integration Guide* for details.



## Associating Dimensions RM Instances to Dimensions CM Products

See the common *Dimensions CM-Dimensions RM Integration Guide* for details.

## Associating Dimensions RM Baselines or Collections to Dimensions CM Projects/Streams

See the common *Dimensions CM-Dimensions RM Integration Guide* for details.

## Command Line Parameters

The Dimensions RM tools provide some command line commands that you can use for common tasks.

| Tool             | Action                        | Command                                                                                                                                                                                                                      |
|------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RM Manage        | Launch RM Manage.             | <code>icmanage -user user -password password -location database -project instance -buffer buffer -dumpfile dumpfile</code>                                                                                                   |
|                  | Back up (Oracle database)     | <code>icmanage -location &lt;database instance name&gt; -project &lt;instance name&gt; -password &lt;instance password&gt; [-buffer &lt;buffer size&gt;] -dumpfile &lt;name and path of backup file to be created&gt;</code> |
|                  | Back up (SQL Server database) | <code>icmanage -location &lt;database instance name&gt; -rmdbapassword &lt;instance password&gt; -dumpfile &lt;name and path of backup file to be created&gt;</code>                                                         |
|                  | Amazon cloud RDS mode         | <code>icmanage -aws</code><br><br>The other command line options (as described above) can be used in combination with the <code>aws</code> option.                                                                           |
| Synch Engine     | Run the Synch Engine          | <code>syncengine [-f file] [-c] [-e level] [-E file] [-L priority] [-k {install config uninstall start stop}] [-n serviceName] [-v] [-h] [-p password] [-P eventName]</code>                                                 |
| ALF Emitter      | Run ALF emitter service       | <code>ALFEventEmitter [-f file] [-c] [-e level] [-E file] [-L priority] [-k {install config uninstall start stop}] [-n name] [-v] [-h]</code>                                                                                |
| Class Definition | Launch class definition.      | <code>clasdef -user user -password password -location database -project instance</code>                                                                                                                                      |

## Using RM Manage within the Amazon Cloud

Dimensions RM supports Amazon's RDS database in the AWS cloud if an Oracle database is used. To use RM Manage with an RDS database in the AWS cloud, use the `aws` option on the command line (execute `icmanage -aws`). When running RM Manage in AWS mode, the following restrictions apply:

- Tablespace cannot be administered.
- Backups of instances can only be created in legacy mode.
- Instances can only be restored in legacy mode.
- Backups of instance schemas cannot be created.
- Instance schemas cannot be restored.

# Log Files

## Logging Configuration File log4cpp.conf

The logging configuration file (<RM Install Dir>\conf\log4cpp.conf by default) controls some of the behavior of the integration between Dimensions RM and another application:

- Level of detail (DEBUG, INFO, WARN, ERROR). For further information about log levels, see chapter ["Log Levels" on page 802](#).
- Location of the log file
- Name of the log file
- Maximum size of the log file. For further information about the log file size, see chapter ["Controlling Log File Size" on page 800](#).

The maximum number of log files that are maintained as a result of "rolling" to additional files after a log file reaches the maximum size limit

The log4cpp.conf file contains these categories:

- fileBrowser
- fileManage
- fileSyncEngine
- fileWebService
- fileAlfEventEmitter
- fileIcCheck
- PoolManager
- fileRTMLS
- fileClasDef
- fileXMLTooling
- fileMailService
- fileMailConfig

You can change the level of detail by replacing the default value (WARN) with one of the other values described in chapter ["Log Levels" on page 802](#).

You can change the location of the log file by updating the log4cpp.conf file. You can also change the name of the log file.

To control the size of the log file, see ["Controlling Log File Size,"](#) below.

The layout of the output of the log file is controlled by the log4j.appender.fileALFEventEmitter.layout settings, which use standard log4j formatting.

**CAUTION!**

You should not change anything else in the `log4cpp.conf` file.

### **Controlling Log File Size**

There are two possible settings for `log4jappenderfile<category>`, which controls how information gets appended to the log. The simplest configuration lets the log file grow indefinitely:

```
log4j.appender.fileALFEventEmitter=org.apache.log4j.FileAppender
```

However, it is more likely that you want to limit the maximum size of the log file so that it does not consume excessive system resources. To do this, specify a "rolling file appender", which starts a new file (such as `ALFEvents.log2`) after the first file exceeds the specified size limit. In the following example, the maximum file size is 5,000,000 bytes, and no more than three (the most recent three) log files are retained.

```
log4j.appender.fileALFEventEmitter=org.apache.log4j.
 RollingFileAppender
log4j.appender.fileALFEventEmitter.maxFileSize=5000000
log4j.appender.fileALFEventEmitter.maxBackupIndex=3
```

Note that if you set `log4j.appender.fileALFEventEmitter.append` to `false` and you are using the rolling file appender, the emitter service starts a new log file each time that you start the service, regardless of whether the maximum file size was reached.

If you are not using the rolling file appender and you set `log4j.appender.fileALFEventEmitter.append` to `false`, the emitter service overwrites the log file each time the service starts.

## **Logging Configuration File `log4net.config`**

The logging configuration file (`<RM Install Dir>\conf\log4net.config` by default) controls the behavior of how the log file is written:

- Level of detail (DEBUG, INFO, WARN, ERROR). For further information about log levels, see chapter ["Log Levels" on page 802](#).
- Location of the log file
- Name of the log file
- Maximum size of the log file. For further information about the log file size, see chapter ["Controlling Log File Size" on page 801](#).

The maximum number of log files that are maintained as a result of "rolling" to additional files after a log file reaches the maximum size limit

The `log4net.config` file contains configurations for these applications/functionalities:

- `RMImport`
- `WordDocumentPostProcessor`

- DashboardExport
- ExcelFormatConverter
- ForceExit
- WordPublishSupport
- ServiceHelper

You can change the level of detail by replacing the default value (INFO) with one of the other values described in chapter ["Log Levels" on page 802](#).

You can change the location of the log file by updating the `log4cpp.conf` file. You can also change the name of the log file.

To control the size of the log file, see ["Controlling Log File Size,"](#) below.

The layout of the output of the log file is controlled by the `log4net.Layout.PatternLayout` settings, which use standard log4net formatting.

**CAUTION!**

You should not change anything else in the `log4net.config` file.

### ***Controlling Log File Size***

The `log4net.config` file allows to limit the maximum size of the log file so that it does not consume excessive system resources. To do this, specify a "rolling file appender", which starts a new file (such as `RMImport.log.2`) after the first file exceeds the specified size limit. In the following example, the maximum file size is 1,048,576,000 bytes, and no more than ten (the most recent ten) log files are retained.

```
<param name="MaximumFileSize" value="1000KB"/>
<param name="MaxSizeRollBackups" value="10"/>
```

Note that if you set `AppendToFile` to `false` and you are using the rolling file appender, the application (e.g. RM Import) or functionality used by Dimensions RM server (e.g. Word Publish Support) starts a new log file each time it is executed, regardless of whether the maximum file size was reached. You might set this for RM Import as it is a client application, for all other configurations, this is not recommended.

## Log Levels

A log file can contain different levels of information. The following table shows the different log level configuration and the resulting information in the log file. The log levels described below are valid for both configuration files, `log4cpp.conf` and

| Log Level | Description                                                                                                                                                                                                       | Log Levels included in Log File                                                                       |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| ERROR     | Shows operations that failed. Error is the most restrictive level of logging.                                                                                                                                     | <ul style="list-style-type: none"><li>■ ERROR</li></ul>                                               |
| WARN      | Provides notification that an operation completed, but there were potential problems with the operation, e.g. output problems with the database or XML file configuration, undefined fields, or value truncation. | <ul style="list-style-type: none"><li>■ ERROR</li><li>■ WARN</li></ul>                                |
| INFO      | Provides general information about an operation.                                                                                                                                                                  | <ul style="list-style-type: none"><li>■ ERROR</li><li>■ WARN</li><li>■ INFO</li></ul>                 |
| DEBUG     | Provides step-by-step information about an operation. Debug is the highest level of logging.                                                                                                                      | <ul style="list-style-type: none"><li>■ ERROR</li><li>■ WARN</li><li>■ INFO</li><li>■ DEBUG</li></ul> |

## Logging with RM Import

### To create a log file for RM Import:

- 1 Open the file `<RM Install Dir>\conf\log4net.conf` with a text editor, e.g. Notepad.
- 2 To change the log level, do the following:
  - a Find the `<level` tag which precedes the `<appender-ref ref="RMImportFile" />` tag.
  - b Change the value attribute to your desired log level. The default is INFO. The whole level tag may look like this: `<level value="INFO" />`  
For further information about log levels, see chapter ["Log Levels" on page 802](#).
- 3 To change the maximum file size, do the following:
  - a Find the `<param name="MaximumFileSize"` tag.
  - b Set the value attribute to your desired file size. The default is 1000KB. You may also specify the file size in MB, e.g. 8MB.
- 4 Start RM Import or RM Import Designer. An `RMImport.log` file is generated in the `<RM Install Dir>\logs` directory, and reports errors that are generated, if any.

## Logging Administrative Activities

Access to Dimensions RM Log files as well as the tracking of administrative activities is now available using the Administrative tools menu in the User Interface. For details, see ["Administrative Tools" on page 604](#) for details.





## Chapter 16

---

# Class Definition Application

|                                           |     |
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## About the Class Definition

The class definition process, referred to in the RM UI as **Schema Definition**, provides management for the instance schema.

A new instance must be defined by a System Administrator using RM Manage (see ["Managing Instances" on page 719](#)), however most functions associated with the definition and maintenance of users and classes, as well as the rules and regulations governing the workflow process can be managed by the Instance Administrator (see ["An Overview of the RM Schema" on page 565](#)).

A **System Administrator** must use RM Manage to execute the following functions not yet available in the UI:

- Copying workflows to another class (see ["Copying a Workflow to another Class" on page 817](#))
- Schema deployment to other servers (see ["Deploying the Instance Schema" on page 813](#))



### **IMPORTANT! We Recommend Using Schema Definition**

The ability to define and manage the Instance Schema can be accomplished in the UI. Please see ["An Overview of the RM Schema" on page 565](#) for information.

**Class Definition** functionality remains available in RM Manage, but will be deprecated.

A class definition consists of the following components:

- A description of the class type (Business, Functional, System, User, etc.)..
- The definition of attributes for the class.
- The identification of the class's relationship to other classes.

### **Class Attributes**

Attributes allow you to manage a known set of properties for each class. Attributes are distinctive pieces of information. When class attributes are present, it becomes possible for project members to search for information based on specific criteria (specific values of the attributes).

### **Relationships Between Classes**

After you have defined the classes, you can set up (and name) relationships between pairs of classes. Typically, each class is related to at least one other class. Without this connection, it is not possible to establish traceability between sets of information.

A relationship identifies how information in one class is connected to information in another class. For example, if you would like to tie a test result back to a program, you would state the relationship as "module is tested by acceptance tests." In this example, *module* is the name of the first class (also known as the primary class), *is tested by* is the name of the relationship, and *acceptance test* is the name of the second class (also known as the secondary class). This will set up the relationship between test results and

modules, and enable traceability to occur between them. Engineers could then check for specific objects associated with either class.

In other words, you can retrieve information based on specific search criteria. Establishing links between objects based on certain attribute values does this. For example, a link could be created between a change request and a requirement based on the value of its approval status attribute (the values being *approved* or *disapproved*). These links are governed by the rules you set up for the relationship.

Dimensions RM relationships identify related classes. When a Dimensions RM relationship is defined, the primary class and the secondary class are identified for the relationship. A primary class can be thought of as the *source class*, and a secondary class can be thought of as the *target class*. Every RM relationship, even recursive or re-entrant relationships, must have a primary and a secondary class. In the class definition diagram, the class at the base of the relationship connector is considered the primary class. The class at the tip of the connector is considered the secondary class.

### **Relationship Rules**

You can set up relationship rules to govern user creation of links and determine the impact of their object edits on the relationship. For example, you can limit the number of links from one object to another, specify what should happen to an object link if the user edits the object, or only allow links based on the value of the attribute.

### **Process Documentation Phase**

It is important to document all critical information throughout the project assessment and class definition phases, as this information forms the basis of your instance configuration decisions and will need to reference it later. Other reasons for this documentation include:

- Referencing earlier decisions for the purpose of maintaining consistency.
- Maintaining this information for future projects.
- Helping others understand the rationale for information modeling decisions.
- The following are examples of this information:
  - The purpose and meaning of each class, attribute and relationship.
  - A code of practice defining responsibilities for each aspect of Dimensions RM operation.
  - The results and rationale for every information-modeling decision.

You can print the details of each class definition to store with your documentation.

### **Attributes for Specific Classes**

When users add a comment, by default, the comment dialog contains a **Role** dropdown list. You can omit this list when you define the comment class.

#### **To define the comment class to omit the Role menu:**

- 1 Start Class Definition (see ["Starting Class Definition" on page 808](#)).
- 2 Select a comment class on the Class Definition diagram.
- 3 Right-click and select **Define**. The **Definition of class** dialog box opens.
- 4 Click the **Attribute** tab.

- 5 In the list of attributes, under **User Defined**, double-click **Role**. The **Definition of attribute 'Role'** dialog box opens.
- 6 Click the **Core** tab.
- 7 Clear the **Attribute Editable** check box, and then click **OK**.
- 8 In the **Definition of class** dialog box, click **OK**.

## Starting Class Definition

The Class Definition application accesses the Instance Schema. The Schema can also be accessed and modified using the Schema Definition available from the UI Administration menu (see [An Overview of the RM Schema](#)). Schema Definition is the recommended approach, however Class Definition remains available for veteran users.

To start Class Definition:

- 1 Start RM Manage.
- 2 Select the instance to be configured.
- 3 Right-click and select **Define Instance Schema**.

The schema is launched in a Read/Write mode only if **no other user** is currently modifying the schema. A user locks an instance schema whenever it is open in read/write mode.

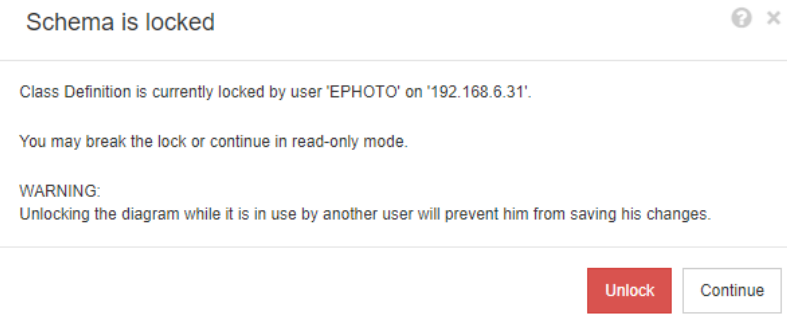


**Figure 16-1. Instance Schema Locked**

If you are sure the user identified is not currently modifying the instance schema, click **Unlock** to reset the lock and load the schema in read/write mode.

Alternatively, you can click **Continue** to load the schema in read-only mode or click **Exit**.

## Working with the Class Definition Diagram

The topics in this section describe how to work with the Class Definition diagram. The include:

- [Editing the Instance Header and Footer](#)

- [Aligning Components](#)
- [The Canvas Grid](#)
- [Centering the Diagram](#)
- [Changing the Canvas Size](#)
- [Finding a Class or Relationship](#)
- [Nudging Objects](#)
- [Ordering Objects](#)
- [Panning the Diagram](#)
- [Selecting Objects](#)
- [Zooming the Diagram](#)

## Editing the Instance Header and Footer

For organizations working with multiple instances in a single database, the administrator may define the instance-wide header and footer that will be displayed in the Class Definition diagram. A default header and footer are created when a new instance is created.

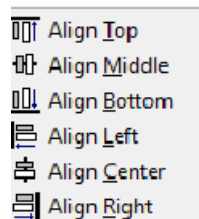
### To edit the header or footer:

- 1 In **Class Definition**, do one of the following:
  - Double-click the header or footer object on the canvas.
  - Select **Edit | Header** or **Edit | Footer**.
- 2 Type the header or footer text you want in the space provided on the canvas.

If a header or footer is not required for the instance, it can be removed from the diagram by selecting the object and clicking **Delete**.

## Aligning Components

You can line up multiple components using the alignment buttons, or align a component by any edge or by its center. For a multiple selection, use the gray selection handles as the point of reference to which components align. The following six alignment commands can be accessed from the Drawing menu or the icons on the toolbar.



## The Canvas Grid

The grid is a set of evenly spaced points on the canvas that are used to align components when they are moved. When the snap-to-grid option is enabled, the top left corner of a component is aligned to a grid point when the component is moved. The snap-to-grid feature can be enabled and disabled using by selecting **Snap to Grid** from the **View** menu. Grid visibility can be turned on and off by selecting **Grid** from the **View** menu.

To change the distance between the points of the grid, or to change the color of the grid, select **Grid Properties** from the **View** menu.

## Centering the Diagram

**To center a diagram:**

- In **Class Definition**, select **Edit | Center Diagram**

All components in the instance schema become centered, providing equal area on each side of the diagram for adding additional components.

## Changing the Canvas Size

You can resize the canvas if it is too large or too small to hold the instance schema.

**To change the canvas size:**

- 1 In **Class Definition**, select **Edit | Resize Canvas**.
- 2 Enter the new width and height in the dialog box. You can enter the new dimensions in inches, millimeters, or centimeters.
- 3 Click **OK**.

This operation may take time to complete, depending on the complexity of the instance schema. Once the schema has been resized, the components will be centered on the canvas, giving an equal amount of space on all sides to add new classes and relationships.

## Finding a Class or Relationship

A class or relationship can be located on the Class Definition diagram.

**To find a class or relationship:**

- 1 In **Class Definition**, select **Find** from the **Edit** menu. The **Find Components** dialog box opens.
- 2 Select a component from the list displayed and then click **Find**.
- 3 The class or relationship selected will be highlighted.

## Nudging Objects

When Class Definition is in selection mode, you can move selected components by clicking and dragging the mouse. When you place the pointer over a component that you can

move, the cursor changes to a crosshair. If the **Snap to Grid** option is enabled, the top-left corner of the component's bounding box aligns with the grid.

You can move selected components by using Nudge commands. The Nudge commands move the components one unit by default and five units if you are holding the Shift key. You can access four nudge commands from the **Nudge** toolbar or the **Drawing** menu.

## Ordering Objects

The components on the Class Definition diagram can be stacked (also known as Z-order). Stacking determines where each component is drawn in the stack. In other words, the order determines which component is drawn last. The component drawn last overwrites the components already on the canvas. Z-order is determined by the order in which the components are added to the model. The last component to be added will be on top.

You can change the Z-order using order commands.

The **Bring Forward** command moves a component one place in the direction of the top of the stack.

The **Send Backward** command moves a component one place in the direction of the bottom of the stack.

A component can be moved directly to either the top or bottom of the stack using the **Bring to Front** or **Send to Back** commands.

Each of the commands is available either from the **Structure** toolbar or the **Drawing** menu.

## Panning the Diagram

**To pan the diagram:**

- 1 To pan to different areas of the diagram, click the **Pan** button  in Class Definition.
- 2 Click and drag the mouse to navigate the diagram.
- 3 To return to editing the diagram, click the **Select** button .

## Selecting Objects

Class Definition starts in selection mode. You can access selection mode by clicking the **Select** button .

You can select a single component by left-clicking it in selection mode. If you want to select multiple components, hold the CTRL key and then left-click each of the components you want to include in the selection, or click and drag to draw a selection rectangle. Gray selection handles distinguish the last-selected component. Class Definition uses anchor components as a reference for alignment operations. If you want another component to serve as the anchor, hold the CTRL key and click another component within the selection.

## Zooming the Diagram

The Class Definition tool provides several options for zooming.

**Zoom to Fit**

From the View menu select **Zoom to Fit** to scale the diagram such that all components on the diagram are visible.

**Zoom to Selection**

Select an object and then select **Zoom to Selection** to scale the diagram such that all selected components are visible.

To select multiple components, hold down the Shift key while clicking the left mouse button on the class or relationship you want to add to the selection. This button will only be enabled when multiple classes, relationships or both have been selected.

**Zoom Normal**

From the View menu select **Zoom Normal** to scale the diagram to its default zoom of 100%. This button will only be enabled when the diagram is zoomed other than 100%.

**Zoom**

Right-click on the canvas and select **Zoom** to zoom in or out on the canvas.

The pointer becomes a magnifying glass when you place it in the client area. In zoom mode, you can click the left mouse button to zoom in or the right mouse button to zoom out. You can set the zooming percentage by selecting **Zoom Custom** from the **View** menu.

To zoom in on a selected area, click and hold the left mouse button while in zoom mode. When you hold the mouse button and drag in zoom mode, the Class Definition tool draws a rectangle to indicate the zoom area. When you have the rectangle positioned in an area of the viewport, release the mouse button to select the area for zooming.

To return to the diagram, click the **Select Tool** button .

The Instance Administrator is responsible for defining and managing relationships using Schema Definition. This functionality is available from the UI, for details please see ["Defining Relationships" on page 579](#).

## Security

**IMPORTANT! New Instance Creation**

Access rights and category permissions are now controlled by the Instance Administrator.

It is necessary for the System Administrator, when creating a new schema, to grant access to the one or more Instance Administrators, but all further permissions should be granted from Instance Administration.

All aspects of Group and User Security, including Class and Relationship properties can be found in the chapter relating to ["Instance Administration" on page 505](#).



# Saving the Class Definition



## IMPORTANT! Saving Class Definition

When using RM Manage or RM Class Definition from a **client** machine, the changes will not take effect until the **Dimensions RM Pool Manager** service is restarted on the RM server.

Best practice is to use the Schema Definition see ["An Overview of the RM Schema" on page 565](#)

In RM Manage to save Class Definition select **File | Save** or click the **Save** button.

If there are one or more users currently working in either Class Definition you have changed, the **Tool Locks** dialog is displayed, identifying the names and computers of the current users, as well as the tools they are using.

You can cancel the save operation until other users have finished working, or you can click **Remove All** to remove the tool locks - but this should only be done if you are sure that the lock has been left by someone no longer working in the schema.

## Reloading the Instance Schema

If changes have been made to the instance schema since the last save operation, you can discard them by selecting **File | Reload**. This discards all changes and reloads the instance schema. **Reload** locks the instance schema so that changes can be made.

## Releasing the Instance Schema Lock

If the schema has been loaded in read/write mode and you do not want to make changes, the schema lock can be released by selecting **Release Lock** from the **File** menu.

This allows another user to make changes to the schema while you are still able to view the read-only version. If any changes have been made, you will be warned that the changes will be lost, and will be allowed to save the changes or cancel the operation.

## Deploying the Instance Schema

It is typical for analysts within the organization to define "the perfect basis schema" to be shared with all new instances. Individual applications teams may choose to add or hide attributes, but there will remain a single shared schema that defines requirements using the corporate lexicon.

The System Administrator is responsible for deploying the Instance Schema. it is possible to:

- Deploy a schema to an instance defined in the same database or on the same network. After deployment, it becomes the responsibility of the Instance Administrator to perform Administration Tasks, e.g. adding groups, users, and defining permissions.
- Deploy a schema to an instance on a separate network. This process uses a combination of backup and restore in conjunction with deploy, and is typically used to deploy a schema from Test to Production after testing changes.

To deploy the schema from one instance to another on the same network, see: ["Deploying the Schema Locally" on page 814](#).

To deploy the schema across the network, see ["Deploying the Schema Across the Network" on page 815](#).



#### CAUTION!

**Create a backup** of the target machine's instance(s) before deploying the schema. This backup should include the data.

Classes that are not present in the source instance are deleted in the target instance when the schema is deployed. ***This also removes the data of these classes.***

**If security permissions are copied**, the security permissions for groups on the target are overwritten.

## Deploying the Schema Locally

- 1 In **RM Manage**, select **File | Deploy Schema**. This opens the **Select Destination Instance(s)** dialog.
- 2 Select one or several instances to deploy.
- 3 Click **OK**. This opens the **Schema Deployment** dialog. This dialog shows the changes that will take place when deploying the schema.  
If you selected several instances to deploy to, click  next to an instance name to view the changes for that instance.
- 4 By default, security permissions are copied. To prevent that security permissions are copied, do the following:
  - a Click **Settings**. This opens the **Deploy Settings** dialog.
  - b Clear the **Include Security Permissions** option.
  - c Click **OK**.
- 5 Review the changes.
- 6 Click **Deploy** to start schema deployment. After deployment is complete, the **Schema Deployment** dialog shows the success message.
- 7 Click **Close**.

## Deploying the Schema Across the Network

To enable the Instance Schema for deployment in another database. For example, when moving tested schema updates from test to production.

- 1 Backup the Instance selected for deployment (see ["Dimensions RM Backup" on page 735](#)) using the account backup. Copy the backup to the targeted server.
- 2 Create an new instance, e.g. Test, in the target server.
- 3 Restore the backup into the new instance, and use Deploy to copy changes into the selected target.



### NOTE

If instance changes will be deployed again using this approach, it might be simpler to leave the new instance on the production server.

If you choose to do this, we recommend that you place the instance offline (right click on the instance and choose 'Place Instance Account Offline') so that it is available for the next deployment without the possibility of any user accessing it.

- 4 In **RM Manage**, select **File | Deploy Schema**. This opens the **Select Destination Instance(s)** dialog.
- 5 Select one or several instances to deploy.
- 6 Click **OK**. This opens the **Schema Deployment** dialog. This dialog shows the changes that will take place when deploying the schema.  
If you selected several instances to deploy to, click  next to an instance name to view the changes for that instance.
- 7 By default, security permissions are copied. To prevent that security permissions are copied, do the following:
  - a Click **Settings**. This opens the **Deploy Settings** dialog.
  - b Clear the **Include Security Permissions** option.
  - c Click **OK**.
- 8 Review the changes.
- 9 Click **Deploy** to start schema deployment. After deployment is complete, the **Schema Deployment** dialog shows the success message.
- 10 Click **Close**.

## Printing the Instance Schema Diagram

To print the instance schema:

- 1 In **Class Definition**, select **File | Print**

- 2 Select print options.
- 3 Click **OK**.

## Printing the Instance Schema Definitions

You can print definitions for each of the classes and relationships to a printer or to an RTF file.



### NOTE

On the preview page you can choose to save the output to an RTF file, which can subsequently be formatted using an RTF-capable editor such as WordPad.

### To print instance schema definitions:

- 1 In **Class Definition**, select **Print Definitions** from the **File** menu.
- 2 Select the definitions you would like to print.
- 3 Click **Next**.
- 4 Select how you would like to print the definitions. You have four types of options: class, relationship, form, and source document. These options allow you to select which class or relationship definitions will be printed, and which data will be printed.
- 5 Click **Next**.
- 6 Click **Print**.
- 7 Click **Finish** to exit.

# Class Def Workflows

A workflow ensures the proper flow of requirements using a defined process that consists of attributes, states and transitions. Requirements must follow this workflow from the time they are submitted.

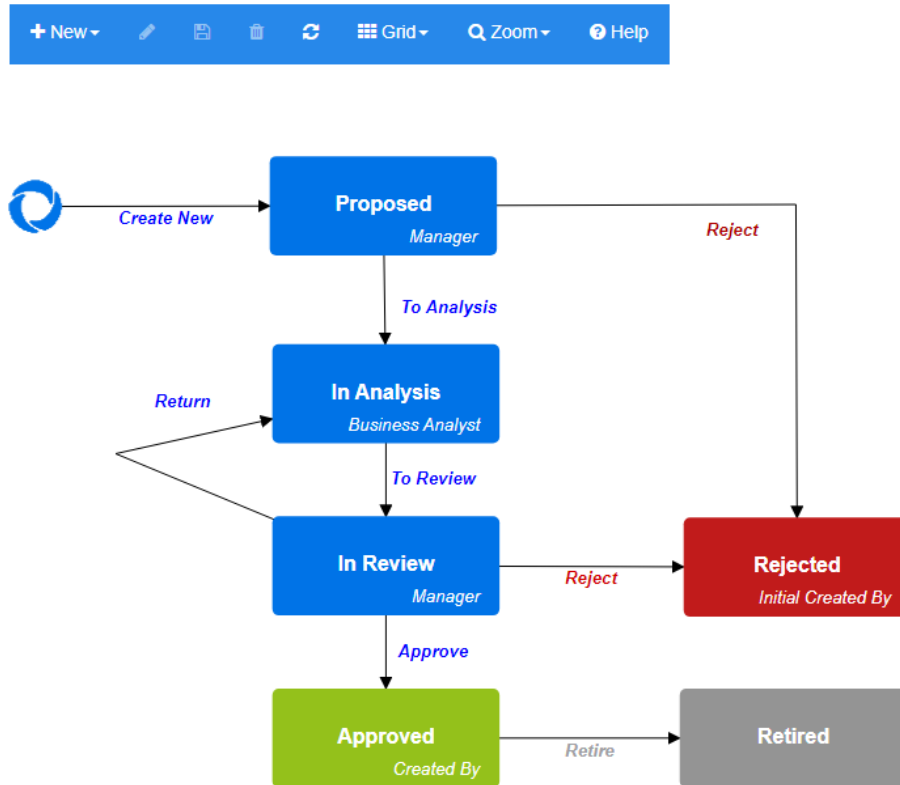


**Figure 16-2. Workflow for class *Product\_Requirements***

The functionality supporting Workflow definition and management is best accomplished by the Instance Administrator. Please see ["Creating and Editing Workflows"](#) on page 589 for details.

It remains the responsibility of the System Administrator to Copy workflows from one class to another, see ["Copying a Workflow to another Class"](#) on page 817.

## Copying a Workflow to another Class

A workflow can be copied from one class to another class. The copied workflow will contain all states and transitions of the original workflow.

**To copy a workflow to another class, follow these steps:**

- 1 Start the **Class Definition** tool.
- 2 Log in with an administrator account.
- 3 Right-click the Class with a Workflow to be shared.
- 4 Select **Copy Workflow** from the shortcut menu. This opens the **Select Destination Class** dialog.

- 5 Select the class into which the workflow should be copied.
- 6 Click **OK**.
- 7 Confirm the success message.
- 8 Save your class definition



**NOTE**

- You cannot copy a workflow if the target class already contains a workflow and there are requirements using that workflow.
- If the source class contains attributes which are not defined in the target class, the workflow constraints and form settings for these attributes are ignored.
- If the target class contains attributes which are not defined in the target class, the workflow will use the defaults for these attributes.
- Security settings are not copied.

## Chapter 17

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# Application Lifecycle Framework (ALF)

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# The Application Lifecycle Framework (ALF)

This chapter describes how to emit Application Lifecycle Framework (ALF) events from Dimensions RM and the Web services needed to implement an integration between Dimensions RM and another application, for example, Dimensions CM.

ALF defines an open source framework which, when adhered to, enables applications to interact using Web services, events, and BPEL process. Download the archived ALF project home page on [www.eclipse.org/alf](http://www.eclipse.org/alf) for more information.

## Architecture

To be involved in an ALF-based integration, Dimensions RM must emit ALF events and send notifications to the ALF Event Manager, which starts ALF service flows that are defined in SBM.

The service flows contain the rule that decides when and how to create items in each application.

## Emitting ALF Events

An *event* is a Web service message sent from Dimensions RM to the ALF infrastructure. The Event Manager defines an event Web service as the interface for ALF events, and Dimensions RM calls this Web service to emit events.

Before emitting an event, Dimensions RM determines whether the Dimensions RM instance is an ALF-enabled instance. The check box on the **Configure ALF Options** dialog box determines this.

For more information about making an instance an ALF-enabled instance, see "[Enabling an Instance for ALF](#)" on page 823.

The following flowchart illustrates the process of emitting an event from Dimensions RM.



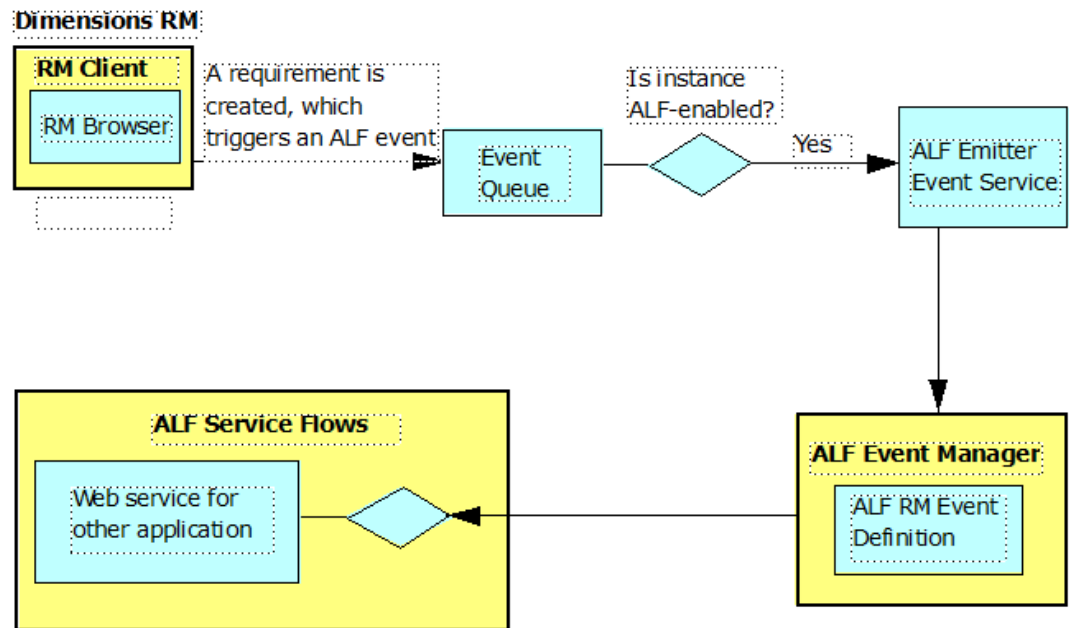


**Figure 17-1. Emitting an Event from Dimensions RM**

The decision block in the **ALF Service Flows** segment of the flowchart depends on the service flow design. For example, suppose you want to create an item in another application when a Dimensions RM requirement is moved to a collection named "Scoping." The decision block would determine whether the event type is "Add to Collection" and accordingly it should create the item in the other application.

Dimensions RM emits events on predefined trigger points, which are defined in the following section. Any condition check for the integration data synchronization is handled in the service flow.

### Trigger Points

The following table describes the trigger points that cause Dimensions RM to emit ALF events.

| Trigger Point                            | Object Type | Event Type           |
|------------------------------------------|-------------|----------------------|
| Requirement is created                   | Requirement | create               |
| Requirement is updated or replaced       | Requirement | update               |
| Requirement is deleted or removed        | Requirement | delete               |
| Requirement is moved to a collection     | Requirement | addToCollection      |
| Requirement is removed from a collection | Requirement | removeFromCollection |
| Attachment is added to a requirement     | Requirement | attachmentAdded      |
| Attachment is removed from a requirement | Requirement | attachmentRemoved    |
| Attachment is updated                    | Requirement | attachmentUpdated    |
| Requirement is linked                    | Link        | create               |
| Requirement is unlinked                  | Link        | delete               |

**Event Definition**

The ALF event definition consists of the following:

- ALF Object Type—A string (for example, *Requirement*).
- ALF Event Type—A string (for example, *create*, *delete*, and so on).
- Custom extension data structure for a requirement or link. The custom extension data structure consists of database name, instance name, requirement type, object ID, PUID, and user name. For the "addToCollection" and "removeFromCollection" events, the collection name is included in the extension data. For link events, the target requirement information is added to the extension data.

If there is a failure in the invocation of the event, error messages will be logged in the log file. For information about logging, see ["ALF Logging" on page 827](#).

**Event Emitter**

A standalone Microsoft® Windows service emits queued ALF events according to the interval specified in the ALFEventConfig.xml file. Events (for example, creating requirements) are not sent in real time, but according to these intervals.

The ALFEventConfig.xml file is stored in the <RM Install Dir>\conf directory.

**Event Emitter Service**

For information about starting and running the event emitter service, see ["Configuring the ALF Emitter Service" on page 824](#).

## Dimensions RM Web Services

Dimensions RM provides CRUD (create, read, update, delete) Web services that can be used for ALF service flows.

The following methods have been added to the existing Web services to support ALF.

| Method                 | Description                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| AddSyncXrefLink        | Creates a reference entry in the SYNC_XREF table, which can be used to store association information between Dimensions RM and the other tool. |
| CreateObject           | Creates a requirement in the specified class.                                                                                                  |
| DeleteAttachment       | Deletes the specified requirement attachment.                                                                                                  |
| DeleteObjects          | Deletes the requirement. This is a soft delete, which deletes the requirement from the instance but not from the database.                     |
| DeleteSyncXrefLink     | Removes the reference entry between Dimensions RM and the other tool.                                                                          |
| GetObjectsInCollection | Gets objects in specific collections.                                                                                                          |
| LinkObjects            | Creates a link between two requirements.                                                                                                       |
| ListCollections        | Gets a list of collections in the instance.                                                                                                    |

| Method                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ListObjectLinks        | Lists all of the links for a requirement.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ReadObject             | Returns information about a requirement.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ReadObjectAttachment   | Returns information about requirement attachments.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| ReadObjects            | <p>Returns information about requirements by reading multiple requirement identities (ids) at once. This is similar to ReadObject, but improves performance as multiple Requirements can be read by their ids in one call.</p> <p>Parameters:</p> <ul style="list-style-type: none"> <li>-sessionid      The current session identifier.</li> <li>-requirements   A list combination of PUID/Classname or objectID/Classname that specifies instance requirements.</li> </ul> |
| ReadSyncXRefLink       | Gets the reference item information.                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| UnLinkObjects          | Removes the link between two requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| UpdateObject           | Updates a requirement.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| UpdateObjectAttachment | Updates requirement attachments.                                                                                                                                                                                                                                                                                                                                                                                                                                              |

For the full syntax and the parameters for these methods, see the Web services HTML reference information downloadable as a zip file from the Open Text Support Web site.

## Enabling an Instance for ALF

ALF events are only emitted in an ALF-enabled instance.

The ALF Event Manager URL format is as follows:

`http://servername:port/eventmanager/services/ALFEventManager`

**Example:** `http://myserver:8085/eventmanager/services/ALFEventManager`

To enable an instance to emit ALF events:

- 1 Start RM Manage.
- 2 Expand the database and select an instance.

- 3 Select **File | Configure ALF Options**. The **Configure ALF Options** dialog box opens.

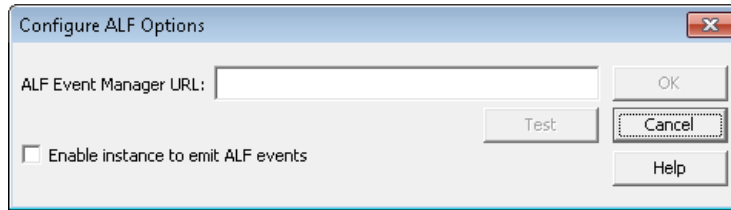


**Figure 17-2. Configure ALF Options**

- 4 In the **ALF Event Manager URL** field, type the URL of the Event Manager server.
- 5 Click **Test** to validate the Event Manager URL. If the test fails, a message is displayed.
- 6 Select the **Enable instance to emit ALF events** check box if you want to make the instance an ALF-enabled instance.

## Configuring the ALF Emitter Service

The following sections describe how to configure the ALF emitter service.

### ALF Usage

The command-line usage for the emitter service is as follows:

```
ALFEventEmitter [-f file] [-c] [-e level] [-E file] [-L priority]
[-k {install|config|uninstall|start|stop}] [-n service_name] [-v] [-h] [-p password] [-l
identifier] [-P eventName]
```

### ALF Options

The options shown in [ALF Usage](#) are described in the following table.

| Option          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -c              | Validates the <code>AlfEventConfig.xml</code> file against the associated schema document. The schema document is specified at the top of the <code>AlfEventConfig.xml</code> file. By default, this file is <code>ALFEventEmitter.xsd</code> and is located in the <code>&lt;RM Install Dir&gt;\conf</code> directory.<br>After validating the document and logging any errors, the emitter service quits without any further processing. |
| -e <i>level</i> | Shows startup errors of the following levels:<br>debug, info, warn, error.                                                                                                                                                                                                                                                                                                                                                                 |
| -E <i>file</i>  | Logs startup errors to a file.                                                                                                                                                                                                                                                                                                                                                                                                             |
| -f <i>file</i>  | Specifies an alternative configuration file.                                                                                                                                                                                                                                                                                                                                                                                               |

| Option               | Description                                                                                                                                                                                                                                           |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -h                   | Lists the available command-line options.                                                                                                                                                                                                             |
| -k <i>install</i>    | Installs an AlfEventEmitter service.                                                                                                                                                                                                                  |
| -k <i>config</i>     | Changes the startup options of an AlfEmitter service.                                                                                                                                                                                                 |
| -k <i>uninstall</i>  | Uninstalls the emitter service.                                                                                                                                                                                                                       |
| -k <i>start</i>      | Starts the emitter service.                                                                                                                                                                                                                           |
| -k <i>stop</i>       | Stops the emitter service.                                                                                                                                                                                                                            |
| -l <i>identifier</i> | Specifies a value used for encrypting the password (used in combination with -p).                                                                                                                                                                     |
| -L <i>priority</i>   | Sets the Windows system priority for the emitter service. servicePriority must be LOW, BELOWNORMAL, NORMAL, ABOVENORMAL, HIGH, or REALTIME.<br>If you do not specify this option, the emitter service runs under the default priority of BELOWNORMAL. |
| -n <i>name</i>       | Sets the service name.                                                                                                                                                                                                                                |
| -p <i>password</i>   | Encrypts the password text for use in the config file.                                                                                                                                                                                                |
| -v                   | Displays the version number.                                                                                                                                                                                                                          |

## Using Encrypted Passwords with ALF

For security purposes, it is suggested to use an encrypted password in the AlfEventConfig.xml file.

**To use an encrypted password in the AlfEventConfig file, do the following:**

- 1 Open the *RM\_Install\conf\AlfEventConfig.xml* file in a text editor, e.g. Notepad.
- 2 Locate the **SBMSSOAuth** tag.
- 3 Identify the user name (the value from the **user** attribute).
- 4 Open a command prompt.
- 5 Navigate to the *RM\_Install\bin* directory.
- 6 Type **AlfEventEmitter -p <your\_password> -l <identifier>** and press **Enter**, e.g. *AlfEventEmitter -p rtm -l opentext*. This outputs the encrypted password. For the example, the output would be: Encrypted value="34C844CC40A557D1"
- 7 Copy the encrypted password (without the quotes) to the Windows clipboard.
- 8 Change back to the text editor with the AlfEventConfig.xml file.
- 9 For the **SBMSSOAuth** tag, ensure that both, **identifier** and decrypt **attribute** are present. If these attributes are not present, create them as empty attributes, e.g. `<SBMSSOAuth user="joe" password="" decrypt="" />`
- 10 **user:** Ensure that the correct user account is used.
- 11 **password:** Replace the current password with the encrypted password from the clipboard.

- 12 identifier:** Replace the current identifier with the one you used in the AlfEventEmitter command line (the value following the **-I** option).
- 13 decrypt:** Ensure that the value is **true**.  
Example for the values used in step 6:  
`<SBMSSOAuth user="joe" password="34C844CC40A557D1" decrypt="true" />`
- 14** Save the file.
- 15** Restart the **Dimensions RM ALF Event Emitter** service.

## Installation

To install the emitter service, use the **-k install** option. This creates an instance of the service with all the other parameters you specify.

To uninstall the emitter service, use the **-k uninstall** option. You must specify the same service name (**-n name**) that you used when you installed the service; otherwise, the service will not be uninstalled correctly.

## Using SSL Authentication with ALF

If you have configured secure sockets layer (SSL) as your authentication method for Open Text Solution Business Manager (SBM) and you are using ALF to integrate with SBM (formerly called Serena Business Mashups), you must complete the steps in this section. These steps are required in order to use Dimensions RM and ALF with SBM with SSL security enabled.

### To use SSL authentication with ALF:

- 1** Open the following file in a text or XML editor:  
RM\_HOME\conf\ALFEventConfig.xml
- 2** Make sure that section such as the following is present and set correctly:

```
<SslAuthentications>
<SslAuthentication authenticationtype="SOAP_SSL_DEFAULT"
cafilename="server.cer"
cafilepath=""
keyfile="client.pem"
keyfilepassword="password" />
</SslAuthentications>
```

- 3** Set the attributes as follows:
  - **authenticationtype**  
Set to any of the following:
    - SOAP\_SSL\_DEFAULT - Default Authentication mode
    - SOAP\_SSL\_NO\_AUTHENTICATION - Disable server authentication
    - SOAP\_SSL\_REQUIRE\_SERVER\_AUTHENTICATION - If the client requires the server to authenticate

- SOAP\_SSL\_REQUIRE\_CLIENT\_AUTHENTICATION - If the server requires the client to authenticate
- SOAP\_SSL\_SKIP\_HOST\_CHECK - If the client does not check the common name of the host in certificate
- SOAP\_SSL\_RSA - Use RSA
- SOAP\_SSLv3\_TLSv1 - Use SSL v3 and TLS v1 support by default
- SOAP\_TLSv1 - Use TLS v1 only

To have more than one authentication type, use a pipe to separate the types (|).  
For example: SOAP\_SSL\_DEFAULT | SOAP\_SSL\_SKIP\_HOST\_CHECK

If "authenticationtype" is blank then the emitter service will interpret the setting as SOAP\_SSL\_NO\_AUTHENTICATION

For details on authentication types, refer to the gSOAP guide:

<http://www.cs.fsu.edu/~engelen/soapdoc2.html>

■ **cafilename**

Trusted certificate file name (this is needed to verify the server).

■ **cafilepath**

Path to the directory with the trusted certificates.

■ **keyfile**

Required only when the client must authenticate to the server.

■ **keyfilepassword**

Password to read the key file.

**4** Save the file.

## ALF Logging

The emitter service provides log files that contain information about its current state. Furthermore, the `AlfEventConfig.xml` file can return to the emitter service information that needs to be written to the log file.



**NOTE** The file named `ALFEvents.log` contains startup information. The startup information describes what happens during the parsing of the `AlfEventConfig.xml` file and other activities by the emitter service before starting an event cycle.

This file contains information about the event cycles themselves. This is the file that you will check the most often.

## ALF Troubleshooting

### ***ALF Event Emitter Service Fails on Startup***

If the **ALF Event Emitter** service fails when starting it, this may be due to an incorrect password in the `AlfEventConfig.xml` file. For further information on encrypted passwords, see chapter ["Using Encrypted Passwords with ALF" on page 825](#).



## Appendix A

---

# Handling Certificates

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## Importing a PFX Certificate into Microsoft IIS

If you are using Solutions Business Manager (SBM), use SBM Configurator to import the certificate into IIS, as this also configures SBM to use the certificate. In this case, you do not have to execute the following steps.

**To import a PFX certificate into IIS, do the following:**

- 1 On the server, start **Server Manager**.
- 2 Expand **Roles**.
- 3 Expand **Web Server (IIS)**.
- 4 Select **Internet Information Services (IIS) Manager**.
- 5 In **Internet Information Services (IIS) Manager**, select your server.
- 6 On the servers **Home** view, double-click **Server Certificates**.
- 7 In the **Actions** pane, click **Import...**
- 8 Click .... This raises the **Open** dialog.
- 9 Select the PFX certificate and click **Open**.
- 10 Enter the password into the **Password** box.
- 11 Ensure that the option **Allow this certificate to be exported** is selected.
- 12 Click **OK**.

## Importing a PFX Certificate into Windows

If you are using IIS, you only need to execute the steps described in chapter ["Importing a PFX Certificate into Microsoft IIS" on page 830](#). You only need to execute the following steps if you are not using IIS.

**To import a certificate to PFX format, do the following:**

- 1 On the server, open a command prompt.
- 2 Enter mmc and press **Enter** to start the Microsoft Management Console.
- 3 From the **File** menu, select **Add/Remove Snap-in...** or press **Ctrl+M**.
- 4 From the list **Available snap-ins**, select **Certificates**.
- 5 Click **Add**.
- 6 In the **Certificates snap-in** dialog, do the following:
  - a Select **Computer account**.
  - b Click **Next**.
  - c Ensure that option **Local computer: (the computer this console is running on)** is selected.

- d** Click **Finish**.
- 7** Click **OK**.
- 8** Expand **Certificates (Local Computer)**.
- 9** Expand **Personal**.
- 10** Select **Certificates**, if it exists. This lists all personal certificates and allows you to check if the certificate has been imported before.
- 11** Right-click **Personal**. This opens a shortcut menu.
- 12** Point to **All Tasks**, then select **Import...**. This opens the **Certificate Import Wizard**.
- 13** Click **Next**.
- 14** Click **Browse...**. This opens the **Open** dialog.
- 15** In the file filter box, select **Personal Information Exchange (\*.pfx;\*.p12)**.
- 16** Select the PFX certificate and click **Open**.
- 17** Click **Next**.
- 18** Enter the password into the **Password** box.
- 19** Select the option **Make this key exportable. This will allow you to back up or transport your keys at a later time**.
- 20** Ensure that the option **Allow this certificate to be exported** is selected.
- 21** Click **Next**.
- 22** Ensure the following:
  - a** The option **Place all certificates in the following store** is selected.
  - b** The **Certificate store** box shows **Personal**.If this is not the case, do the following:
  - c** Select the option **Place all certificates in the following store**.
  - d** Click **Browse...**. This opens the **Select Certificate Store** dialog.
  - e** Select **Personal** and click **OK**.
- 23** Click **Next**.
- 24** Click **Finish** and confirm the success message.

# Exporting Certificates

## Exporting Certificates to CER Format from the Management Console

The CER format is used for import into most keystores. For the SSL keystore (e.g. sample-ssl.jks) in Tomcat's conf directory, a PFX certificate is required (see chapter ["Exporting Certificates to PFX Format from the Management Console" on page 834](#)).

The following steps assume that the certificate is available on the web server, and imported to Windows.

**To export a certificate to CER format, execute these steps:**

- 1 On the server, open a command prompt.
- 2 Enter **mmc** and press **Enter** to start the Microsoft Management Console.
- 3 From the **File** menu, select **Add/Remove Snap-in...** or press **Ctrl+M**.
- 4 From the list **Available snap-ins**, select **Certificates**.
- 5 Click **Add**.
- 6 In the **Certificates snap-in** dialog, do the following:
  - a Select **Computer account**.
  - b Click **Next**.
  - c Ensure that option **Local computer: (the computer this console is running on)** is selected.
  - d Click **Finish**.
- 7 Click **OK**.
- 8 Expand **Certificates (Local Computer)**.
- 9 Locate the certificate in the tree. Common locations are:
  - Personal | Certificates
  - Trusted Root Certification Authorities | Certificates
- 10 Right-click the certificate and select **All Tasks | Export** from the shortcut menu. This opens the **Certificate Export Wizard**.
- 11 Click **Next**.
- 12 Ensure that option **No, do not export the private key** is selected.
- 13 Click **Next**.
- 14 Ensure that option **DER encoded binary X.509 (.CER)** is selected.
- 15 Click **Next**.
- 16 Click **Browse...** to open a dialog to save the certificate.
- 17 Select the target directory and specify a file name.

- 18** Click **Save**.
- 19** Click **Next**.
- 20** Click **Finish** and confirm the success message.
- 21** Double-click the certificate and select the **Certification Path** tab.
- 22** If there are other certificates referenced, do the following:
  - a** Select the certificate.
  - b** Click **View Certificate**.
  - c** Select the **Details** tab.
  - d** Click **Copy to File....** This opens the **Certificate Export Wizard** for the selected certificate.
  - e** Ensure that the option **DER encoded binary X.509 (.CER)** is selected.
  - f** Click **Next**.
  - g** Click **Browse...** to open a dialog to save the certificate.
  - h** Select the target directory and specify a file name.
  - i** Click **Save**.
  - j** Click **Next**.
  - k** Click **Finish** and confirm the success message.
  - l** Click **OK** to close the certificate.
  - m** Repeat steps a-l for any other certificate in the certification path (except for your server, which you exported already with steps 10-20).

## Exporting Certificates to CER Format from IIS

The CER format is used to import into most keystores. For the SSL keystore (e.g. sample-ssl.jks) in Tomcat's conf directory, a PFX certificate is required (see chapter ["Exporting Certificates to PFX Format from the Management Console" on page 834](#)).

The following steps assume that the certificate is available on the Internet Information Server (IIS).

### To export a certificate to CER format, execute these steps:

- 1** Start the **Computer Management Console** by running the command `compmgmt.msc`. Alternatively you can right-click on the Computer icon and select **Manage** from the resulting menu.
- 2** Locate **Internet Information Server (IIS) Manager**.
- 3** Select a computer node.
- 4** From the **Home** list, locate the **Server Certificates** icon and expand it.
- 5** Locate the IIS certificate from the list and open it.
- 6** From the opened dialog, switch to the **Certification Path** tab.

- 7 Select a CA certificate from the list and open it.
- 8 From the opened dialog, switch to the **Details** tab.
- 9 Click **Copy to File**. This opens the **Certificate Export Wizard**.
- 10 Click **Next**.
- 11 Ensure that option **No, do not export the private key** is selected.
- 12 Click **Next**.
- 13 Ensure that option **DER encoded binary X.509 (.CER)** is selected.
- 14 Click **Next**.
- 15 Click **Browse...** to open a dialog to save the certificate.
- 16 Select the target directory and specify a file name.
- 17 Click **Save**.
- 18 Click **Next**.
- 19 Click **Finish** and confirm the success message.
- 20 Use an openssl tool to convert the file to .PEM format as in this example:  

```
openssl x509 -in exported_certificate.cer -out
certificate_for_rm.pem -inform DER -outform PEM
```



#### NOTE

- **Do not use a self-signed certificate** on the RM Web Server.
- You can obtain an openssl binary from <http://www.openssl.org/>

## Exporting Certificates to PFX Format from the Management Console

A certificate in PFX format is required for import into the ssl keystore (e.g. sample-ssl.jks) in Tomcat's conf directory. For all other keystores, use the CER format (see chapter ["Exporting Certificates to CER Format from the Management Console" on page 832](#)).

The following steps assume that the certificate is available on the web server, and imported to Windows.

#### To export a certificate to PFX format, execute these steps:

- 1 On the server, open a command prompt.
- 2 Enter mmc and press **Enter** to start the Microsoft Management Console.
- 3 From the **File** menu, select **Add/Remove Snap-in...** or press **Ctrl+M**.
- 4 From the list **Available snap-ins**, select **Certificates**.
- 5 Click **Add**.

- 6 In the **Certificates snap-in** dialog, do the following:
  - a Select **Computer account**.
  - b Click **Next**.
  - c Ensure that option **Local computer: (the computer this console is running on)** is selected.
  - d Click **Finish**.
- 7 Click **OK**.
- 8 Expand **Certificates (Local Computer)**.
- 9 Locate the certificate in the tree. Common locations are:
  - Personal | Certificates
  - Trusted Root Certification Authorities | Certificates
- 10 Right-click the certificate and select **All Tasks | Export** from the shortcut menu. This opens the **Certificate Export Wizard**.
- 11 Click **Next**.
- 12 Select the option **Yes, export the private key**.
- 13 Click **Next**.
- 14 Ensure that option **Personal Information Exchange - PKCS #12 (.PFX)** is selected.
- 15 Select the following options:
  - **Include all certificates in the certification path if possible**
  - **Export all extended properties**
- 16 Click **Next**.
- 17 Enter a password into the **Password** and **Type and confirm password (mandatory)** boxes. Take a note of that password.
- 18 Click **Next**.
- 19 Click **Browse...** to open a dialog to save the certificate.
- 20 Select the target directory and specify a file name.
- 21 Click **Save**.
- 22 Click **Next**.
- 23 Click **Finish** and confirm the success message.

## Exporting Certificates to PFX Format from IIS

A certificate in PFX format is required for import into the ssl keystore (e.g. sample-ssl.jks) in Tomcat's conf directory. For all other keystores, use the CER format (see chapter ["Exporting Certificates to CER Format from the Management Console" on page 832](#)).

The following steps assume that the certificate is available on the Internet Information Server (IIS).

**To export a certificate to PFX format, execute these steps:**

- 1** Do one of the following:
  - Start the **Server Manager**, and expand **Roles** followed by **Web Server (IIS)**.
  - Start the **Computer Management Console** by running the command `compmgmt.msc`, and expand **Services and Applications**.
  - Right-click on the Computer icon, select **Manage** from the resulting menu, and expand **Services and Applications**.
- 2** Select **Internet Information Server (IIS) Manager**.
- 3** In the **Connections** pane, select a computer node.
- 4** On the **Home** pane, double-click the **Server Certificates** icon.
- 5** Double-click the IIS certificate. This opens the **Certificate** dialog.
- 6** Select the **Details** tab.
- 7** Click **Copy to File**. This opens the **Certificate Export Wizard**.
- 8** Click **Next**.
- 9** Select the option **Yes, export the private key**.
- 10** Click **Next**.
- 11** Ensure that option **Personal Information Exchange - PKCS #12 (.PFX)** is selected.
- 12** Select the following options:
  - **Include all certificates in the certification path if possible**
  - **Export all extended properties**
- 13** Click **Next**.
- 14** Enter a password into the **Password** and **Type and confirm password (mandatory)** boxes. Take a note of that password.
- 15** Click **Next**.
- 16** Click **Browse...** to open a dialog to save the certificate.
- 17** Select the target directory and specify a file name.
- 18** Click **Save**.
- 19** Click **Next**.



- 20 Click **Finish** and confirm the success message.

**NOTE**

- **Do not use a self-signed certificate** on the RM Web Server.

## Exporting a Certificate from the STS Server from the Command Prompt

When using SBM, you can export the STS certificate through SBM configurator (see chapter ["Exporting the STS Certificate from SBM Configurator" on page 838](#)).

### To export the STS certificate, do the following:

- 1 From a command prompt, navigate to the following directory on the STS server:  
TokenService.war\WEB-INF\conf
- 2 Type `keytool` and press **Enter**. If you receive the message that `keytool` is not recognized, type the following command and press **Enter**:  
`set path=%path%;"RM_Install\Common Tools #.#.#.#\jre\#.#\bin"`

**NOTE**

- Replace *RM\_Install* with the path to the Dimensions RM directory, e.g.  
*C:\Program Files\Open Text\Dimensions 12.12*.
- Replace *#.#.#.#* with the Common Tools version number, e.g. *2.3.0.0*.
- Replace *#.#* with the Java version number, e.g. *11.0*.

The complete set command may look like this:

```
set path=%path%;"C:\Program Files\Open
Text\Dimensions
12.12\Common Tools 2.3.0.0\jre\11.0\bin"
```

- 3 Type the following command (all on one line) and press **Enter**:  
`keytool -export`

```
-keystore keystore.jks -storepass StorePassword
-alias sts -file CerPath
```



#### NOTE

- Replace *StorePassword* with the password for the keystore. The default for keystore.jks is **changeit**
- Replace *CerPath* with the full path to your certificate in CER format. If the path contains spaces, surround the path with double quotes.

The complete keytool command may look like this (all on one line):

```
keytool -export -keystore keystore.jks -
storepass MyPassword
-alias sts -file "C:\My
Certificates\MyCert.cer"
```

- 4 To convert the certificate to PEM format, type the following openssl command and press **Enter**:  

```
openssl x509 -in CerPath -inform DER -out PemPath -outform PEM
```



#### NOTE

- You can obtain an openssl binary from <http://www.openssl.org/>.
- Replace *CerPath* with the full path to your certificate in CER format. If the path contains spaces, surround the path with double quotes.
- Replace *PemPath* with the full path you want to save the certificate in PEM format to. If the path contains spaces, surround the path with double quotes.

The complete keytool command may look like this (all on one line):

```
openssl x509 -in "C:\My
Certificates\MyCert.cer" -inform DER
-out "C:\My Certificates\MyCert.pem" -
outform PEM
```

## Exporting the STS Certificate from SBM Configurator

When using SBM, you can export the STS certificate through SBM configurator, which allows exporting the certificate into various formats.

**To export the STS certificate, do the following:**

- 1 Start **SBM Configurator**.
- 2 In the **Advanced** set, select **Security**.
- 3 In the **Components** list, ensure that **STS** is selected.

- 4 Click **Actions**. This opens a shortcut menu.
- 5 From the shortcut menu, select **Export Certificate**. This opens the **Save As** dialog.
- 6 In the **Save as type** box, select the desired format.

**NOTE**

- If you require the certificate for copying it to *RM\_Install\RM\conf*, choose **(\*pem)**.
- If you require the certificate for importing it into a keystore (e.g. *truststore.jks*), choose **(\*cer)**.

- 7 Navigate to a directory to which you want to save the file to.
- 8 Enter a file name (e.g. *sts.pem* or *sts.cer* depending on the Save as type setting) into the **File name** box.
- 9 Click **Save** and confirm the success message.

## Listing all Certificates in a Keystore

### To retrieve the alias, execute these steps:

- 1 Open a command prompt and navigate to the directory where the keystore is located.
- 2 Type `keytool` and press **Enter**. If you receive the message that `keytool` is not recognized, type the following command and press **Enter**:  
`set path=%path%; "RM_Install\Common Tools #.#.#.#\jre\#.#\bin"`

**NOTE**

- Replace *RM\_Install* with the path to the Dimensions RM directory, e.g.  
*C:\Program Files\Open Text\Dimensions 25.4 (13.1)*.
- Replace *#.#.#.#* with the Common Tools version number, e.g. *2.3.0.0*.
- Replace *#.#* with the Java version number, e.g. *11.0*.

The complete set command may look like this:

```
set path=%path%; "C:\Program Files\Open
Text\Dimensions
12.12\Common Tools 2.3.0.0\jre\11.0\bin"
```

- 3 Type the following command (all on one line) and press **Enter**:  
`keytool -list -v  
-keystore Keystore -storepass StorePassword >certs.txt`

**NOTE**

- Replace *Keystore* with the path to the desired keystore. If the path contains spaces, surround the path with double quotes.
- Replace *StorePassword* with the password for the keystore.

The complete keytool command may look like this (all on one line):

```
keytool -list -v -keystore sample-ssl.jks -
storepass serena
>certs.txt
```

- 4 Type `notepad certs.txt` and press **Enter**. This opens the file `certs.txt` in Notepad. The file `certs.txt` contains detailed information about all certificates in the keystore.

## Retrieving the Alias from a PFX File

When importing the certificate into the Dimensions RM Common Tomcat, the alias used in the PFX file is required.

**To retrieve the alias, execute these steps:**

- 1 Open a command prompt and navigate to the directory where the PFX file is located.
- 2 Type `keytool` and press **Enter**. If you receive the message that `keytool` is not recognized, type the following command and press **Enter**:  
`set path=%path%;"RM_Install\Common Tools ###.#\jre\##\bin"`

**NOTE**

- Replace *RM\_Install* with the path to the Dimensions RM directory, e.g.  
`C:\Program Files\Open Text\Dimensions 25.4 (13.1)`.
- Replace *###.#* with the Common Tools version number, e.g. `2.3.0.0`.
- Replace *##* with the Java version number, e.g. `11.0`.

The complete set command may look like this:

```
set path=%path%;"C:\Program Files\Open
Text\Dimensions
12.12\Common Tools 2.3.0.0\jre\11.0\bin"
```

- 3 Type the following command (all on one line) and press **Enter**:  
`keytool -list -v  
 -keystore PfxCertificate -storepass PfxPassword >pfx.txt`

**NOTE**

- Replace *PfxCertificate* with the file name of your PFX certificate. If the file name contains spaces, surround the file name with double quotes.
- Replace *PfxPassword* with the password for the PFX certificate. If you exported the certificate as described in chapter ["Exporting Certificates to PFX Format from the Management Console,"](#) use the password you specified on export.

The complete keytool command may look like this (all on one line):

```
keytool -list -v

-keystore MyCertificate.pfx -storepass

topsecret >certs.txt
```

- 4 Type `notepad pfx.txt` and press **Enter**. This opens the file `pfx.txt` in Notepad.
- 5 Locate the line starting with **Alias name** and write down the value. In this example, the alias name is 1: **Alias name: 1**

## Retrieving Root CA and Intermediate CA Certificate Files

### Retrieving From a Certificate

The system certificate manager typically manages many certificates. The following steps show how to extract a certificate for both PFX and CER certificates. If there are issues, please check your corporate system administrator.

A certificate path may look like this:

- Root CA
  - Intermediate CA
    - Server

There may be several intermediate CAs in a certificate. If the intermediate CA files are required, all must be exported.

### Retrieving Root CA and Intermediate CA Certificate Files from a PFX File

PFX files must be opened in the Certificate Manager.

**To open a PFX certificate in the Certificate Manager, execute these steps:**

- 1 Open a command prompt.

- 2 Type **certmgr** and press **Enter**. This starts the Certificate Manager.
- 3 Locate the certificate in the tree. A common location may be **Personal | Certificates**.  
  
If you cannot find the certificate, you need to (temporarily) import it by executing these steps:
  - a Right-click the **Personal** folder. In the shortcut menu, point to **All Tasks**, and then select **Import....** This opens the **Certificate Import Wizard**.
  - b Click **Next**.
  - c Click **Browse....**
  - d From the file filter box, select **Personal Information Exchange (\*.pfx;\*.p12)**.
  - e Select the PFX file and click **Open**.
  - f Click **Next**.
  - g In the **Password** box, type the current password for the PFX file.
  - h Click **Next**.
  - i Click **Next**.
  - j Click **Finish** to import the file and confirm the success message.
  - k In the tree, expand **Personal**, then select **Certificates**.
- 4 Double-click the Certificate. This opens the **Certificate** dialog. Continue with step 2 in chapter ["Retrieving from a CER File" on page 842](#).

#### Retrieving from a CER File

The following steps describe how to retrieve root CA and intermediate CA certificates from a server certificate file in CER format. Depending on your certificate, there may be no root CA and/or intermediate CA certificates.

**To retrieve root CA and intermediate CA certificate files from a CER file, do the following:**

- 1 Double-click the CER file. This opens the **Certificate** dialog.
- 2 Select the **Certification Path** tab.
- 3 If you see only one entry (your server name), there are no root CA and intermediate CAs. Skip all further steps.
- 4 Select the top certificate (this is the root CA).
- 5 Click **View Certificate**. This opens the selected certificate.
- 6 Select the **Details** tab.
- 7 Click **Copy to File....** This opens the **Certificate Export Wizard**.
- 8 Click **Next**.
- 9 Select the export format, e.g. **DER-encoded binary X.509 (.CER)**.
- 10 Click **Next**.

- 11 Click **Browse...** to specify the path/file name to which you want to export the certificate.
- 12 Click **Next**.
- 13 Click **Finish** and confirm the success message.
- 14 Click **OK** to close the certificate.
- 15 If there are certificates between the root CA certificate and the server certificate, select each of them and execute steps 5-14.

## Importing Root and Intermediate CA into Local Certificate Store

**To import a root CA certificate and/or an intermediate CA certificate in CER format, do the following:**

- 1 On the server, open a command prompt.
- 2 Enter mmc and press **Enter** to start the Microsoft Management Console.
- 3 From the **File** menu, select **Add/Remove Snap-in...** or press **Ctrl+M**.
- 4 From the list **Available snap-ins**, select **Certificates**.
- 5 Click **Add**.
- 6 In the **Certificates snap-in** dialog, do the following:
  - a Select **Computer account**.
  - b Click **Next**.
  - c Ensure that option **Local computer: (the computer this console is running on)** is selected.
  - d Click **Finish**.
- 7 Click **OK**.
- 8 Expand **Certificates (Local Computer)**.
- 9 To import a **root CA certificate**, do the following:
  - a Right-click **Trusted Root Certification Authorities**. This opens a shortcut menu.
  - b Point to **All Tasks**, then select **Import....** This opens the **Certificate Import Wizard**.
  - c Click **Next**.
  - d Click **Browse....** This opens the **Open** dialog.
  - e In the file filter box, select **X.509 Certificate (\*.cer;\*.crt)**.
  - f Select the CER certificate and click **Open**.
  - g Click **Next**.
  - h Click **Next**.

- i Click **Finish** and confirm the success message.
- 10 To import an **intermediate CA certificate**, do the following:
  - a Right-click **Intermediate Certification Authorities**. This opens a shortcut menu.
  - b Point to **All Tasks**, then select **Import....** This opens the **Certificate Import Wizard**.
  - c Click **Next**.
  - d Click **Browse....** This opens the **Open** dialog.
  - e In the file filter box, select **X.509 Certificate (\*.cer;\*.crt)**.
  - f Select the CER certificate and click **Open**.
  - g Click **Next**.
  - h Click **Next**.
  - i Click **Finish** and confirm the success message.



---

# Database Security

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# Considering Database Security

This chapter provides the procedures to configure your database to provide more security. Note that the procedures described may or may not work on your environment.

## Oracle Database Security

The following sections discuss:

- [Using Transport or Native Network Encryption](#)
- [Transport Encryption with Oracle](#)
- [Native Network Encryption with Oracle](#)
- [Transparent Data Encryption with Oracle](#)

### Using Transport or Native Network Encryption

Transport encryption is safer than native network encryption, but requires configuration on the client machines.

The following overview shows the differences between those encryptions:

**Transport Encryption:** (see chapter ["Transport Encryption with Oracle" on page 847](#))

- ++ Very secure
- + Security standard compliant
- + Strong authentication when using PKI certificates
- Uses a certificate, which needs to be updated regularly
- Changes on client machines are necessary

**Native Encryption:** (see chapter ["Native Network Encryption with Oracle" on page 853](#))

- + Easy to configure
- + No changes for client machines necessary
- + No certificate required
- Not as secure as Transport Encryption; it allows server impersonation for example



#### CAUTION!

You should only use one encryption method (in this case: transport encryption). If you enable both, transport encryption **and** native encryption, you will get the ORA-12696 Double Encryption Turned On error for databases older than 19c.

## Transport Encryption with Oracle

Transport encryption requires that some steps are done on the database machine while other steps are done on the Dimensions RM application server and those machines on which you have the Dimensions RM admin client tools (such as RM Manage) installed.

### Execute the following steps:

- 1 Open a remote session to the Dimensions RM application server.
- 2 Stop all Dimensions RM related services in this order:
  - Dimensions RM SyncEngine and any other SyncEngine service
  - Dimensions RM Common Tomcat
  - Dimensions RM Dimensions RM Pool Manager
  - Dimensions RM ALF Event Emitter
  - Dimensions RM E-Mail Notification Service



#### IMPORTANT!

While the services are shut down, users cannot use Dimensions RM. If there are other web applications running on Dimensions RM Common Tomcat, users of those applications will also be unable to work.

- 3 Execute the steps described in chapter ["Database Server Configuration" on page 848](#).
- 4 Execute the steps described in chapter ["Dimensions RM Application Server and Admin Client Configuration" on page 851](#).
- 5 Start the services you shut down in step 2 in this order:
  - Dimensions RM Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM ALF Event Emitter
  - Dimensions RM E-Mail Notification Service
  - Dimensions RM SyncEngine and any other SyncEngine service
- 6 If you have client machines running the Dimensions RM admin client tools (such as RM Manage), execute the steps described in chapter ["Dimensions RM Application Server and Admin Client Configuration" on page 851](#).

## Database Server Configuration



### IMPORTANT!

The following steps will use the placeholder `$ORACLE_HOME`. In those steps you need to replace `$ORACLE_HOME` with the actual path of your Oracle home directory. e.g.

`C:\app\ORACLEAdmin\product\12.1.0\dbhome_1`



### CAUTION!

Before you start, ensure that all services related to Dimensions RM have been stopped (see chapter ["Transport Encryption with Oracle" on page 847](#)).

### To configure Oracle to use transport encryption, execute these steps:

- 1 Log in (e.g. by a Remote Desktop connection) to the Oracle database server.
- 2 Open a command prompt.
- 3 Change to your Oracle home directory, e.g.  
`C:\app\ORACLEAdmin\product\12.1.0\dbhome_1`.
- 4 Type the following command and press **Enter**: `md tns_wallet`
- 5 Type the following command (all on one line) and press **Enter**:  
`orapki wallet create`  
`-wallet "$ORACLE_HOME\tns_wallet" -pwd myPass -auto_login`



### NOTE

- Replace `$ORACLE_HOME` with the full path to your Oracle home directory.
- Replace `myPass` with your preferred password and take a note of that password.

- 6 Assign a certificate to the wallet.

### To create a self-signed certificate:

Type the following command (all on one line) and press **Enter**:

```
orapki wallet add -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-sign_alg sha256 -dn "CN=dbcert" -keysize 2048 -self_signed
-validity 180
```

**NOTE**

**Replace** *\$ORACLE\_HOME* with the full path to your Oracle home directory.

**Replace** *myPass* with the password you specified in step 4.

**Change the validity** (180 in the command above) to your preferred value.

**To use an existing certificate in CER format, execute these steps:**

- a** Retrieve the root CA certificate and all Intermediate CA certificate from the certificate as described in chapter ["Retrieving Root CA and Intermediate CA Certificate Files"](#) on page 841.

**TIP**

If you have more than one intermediate CA certificate, number them as you need to import them in that order as they are in the certificate.

- b** To import the root certificate, type the following command (all on one line) and press **Enter**:

```
orapki wallet add -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-trusted_cert -cert C:\temp\Root.cer
```

- c** To import an intermediate CA certificate, type the following command (all on one line) and press **Enter**:

```
orapki wallet add -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-trusted_cert -cert C:\temp\Intermediate1.cer
```

**NOTE**

**Replace** *\$ORACLE\_HOME* with the full path to your Oracle home directory.

**Replace** *myPass* with the password you specified in step 4.

**Replace** the certificate path to match your environment.

- d** Repeat step c for any other intermediate CA certificate.
- e** To import the trusted certificate, type the following command (all on one line) and press **Enter**:

```
orapki wallet add -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-trusted_cert -cert c:\temp\Mycert.cer
```

**7 If you created a self-signed certificate in step 6:**

Export the certificate as a file by typing the following command (all on one line) followed by **Enter**:

```
orapki wallet export -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-dn "CN=dbcert" -cert C:\temp\db-export-certificate.cer
```



**NOTE**

**Replace** *\$ORACLE\_HOME* with the full path to your Oracle home directory.

**Replace** *myPass* with the password you specified in step 4.

**Replace** the certificate path to match your environment.

- 8** Retrieve the exported certificate (and root CA and intermediate CA certificates if you used a certificate in PFX format) for Dimensions RM application server and admin client tools configuration.
- 9** Navigate to the `listener.ora` file, which is located in `$ORACLE_HOME\NETWORK\ADMIN`.
- 10** Open the `listener.ora` file with Notepad.
- 11** Add the following line to the address list section:  
(ADDRESS = (PROTOCOL = TCPS) (HOST = 0.0.0.0) (PORT = 1777))



**NOTE**

Replace 0.0.0.0 with the actual hostname/IP value of your environment

Replace 1777 with the port number you wish to use with your environment.

- 12** Save the file.
- 13** Restart the Oracle Listener service.

## Dimensions RM Application Server and Admin Client Configuration



### CAUTION!

Before you start, ensure that you executed the previous steps (see chapter "Transport Encryption with Oracle" on page 847).



### IMPORTANT!

The following steps will use the placeholder `$ORACLE_HOME`. In those steps you need to replace `$ORACLE_HOME` with the actual path of your Oracle home directory. e.g.  
`C:\app\ORACLEAdmin\product\12.1.0\dbhome_1`

### To configure Dimensions RM to use transport encryption for Oracle database connections, execute these steps:

- 1 Log in (e.g. by a Remote Desktop connection) to the Dimensions RM application server.

If your Oracle database is running on the same machine as your Dimensions RM server, continue with step 7.

- 2 Open a command prompt.
- 3 Change to your Oracle home directory, e.g.  
`C:\app\ORACLEAdmin\product\12.1.0\dbhome_1`.
- 4 Type the following command and press **Enter**: `md tns_wallet`
- 5 Type the following command (all on one line) and press **Enter**:  
`orapki wallet create`  
`-wallet "$ORACLE_HOME\tns_wallet" -pwd myPass -auto_login_local`



### NOTE

**Replace** `$ORACLE_HOME` with the full path to your Oracle home directory.

**Replace** `myPass` with your preferred password and take a note of that password.

**Replace** the certificate path to match your environment.

- 6 Import the certificate(s) from the database server.
  - a If there is a root certificate, type the following command (all on one line) and press **Enter**:

```
orapki wallet add -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-trusted_cert -cert C:\temp\Root.cer
```



**NOTE**

**Replace** *\$ORACLE\_HOME* with the full path to your Oracle home directory.

**Replace** *myPass* with your preferred password and take a note of that password.

**Replace** the certificate path to match your environment

- b** If there is at least one intermediate CA certificate, type the following command (all on one line) and press **Enter**:

```
orapki wallet add -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-trusted_cert -cert C:\temp\Intermediate1.cer
```



**NOTE**

**Replace** *\$ORACLE\_HOME* with the full path to your Oracle home directory.

**Replace** *myPass* with the password you specified in step 4.

**Replace** the certificate path to match your environment.

- c** Repeat step b for any other intermediate CA certificate.
- d** To import the database server certificate, type the following command (all on one line) and press **Enter**:

```
orapki wallet add -wallet "$ORACLE_HOME\tns_wallet" -pwd myPass
-trusted_cert -cert C:\temp\db-export-certificate.cer
```



**NOTE**

**Replace** *\$ORACLE\_HOME* with the full path to your Oracle home directory.

**Replace** *myPass* with the password you specified in step 4.

**Replace** the certificate path to match your environment.

- 7** Navigate to the `sqlnet.ora` file, which is located in `$ORACLE_HOME\NETWORK\ADMIN`.
- 8** Open the `sqlnet.ora` file with Notepad.
- 9** Add the following text:

```
WALLET_LOCATION =
 (SOURCE =
 (METHOD = FILE)
 (METHOD_DATA =
```



```

 (DIRECTORY = $ORACLE_HOME\tns_wallet)
)
)
SSL_CLIENT_AUTHENTICATION = FALSE
SSL_CIPHER_SUITES=(SSL_RSA_WITH_AES_256_CBC_SHA,
SSL_RSA_WITH_3DES_EDE_CBC_SHA)

```

**NOTE**

Replace `$ORACLE_HOME` with the full path to your Oracle home directory.

- 10** For `SQLNET.AUTHENTICATION_SERVICES`, add the **TCPS** protocol, so it might look like this: `SQLNET.AUTHENTICATION_SERVICES = (TCPS,NTS)`

- 11** Save the file.

- 12** Navigate to the `tnsnames.ora` file, which is located in `$ORACLE_HOME\NETWORK\ADMIN`

Add the following:

```

RM_SSL =
 (DESCRIPTION=
 (ADDRESS_LIST =
 (ADDRESS = (PROTOCOL = TCPS) (HOST = 0.0.0.0) (PORT = 1777))
)
 (CONNECT_DATA =
 (SERVER = DEDICATED)
 (SERVICE_NAME = RM)
)
)
)

```

**NOTE**

**Replace** 0.0.0.0 with the actual hostname/IP value of your environment

**Replace** 1777 with the port number you wish to use with your environment.

## Native Network Encryption with Oracle

To configure native network encryption, execute these steps:

- 1** Locate your `sqlnet.ora` configuration file. Usually you find it under `product\<version>\dbhome_1\NETWORK\ADMIN`, e.g.  
`C:\app\ORACLEAdmin\product\12.1.0\dbhome_1\NETWORK\ADMIN`.

- 2** Open the `sqlnet.ora` file with Notepad.

- 3** Add the following lines:

```
SQLNET.ENCRYPTION_SERVER = required
```

```
SQLNET.ENCRYPTION_TYPES_SERVER = (AES256)
```

**4** Save the file.

**5** To verify if the configuration change is successful, do the following:

- a** Open a command prompt.
- b** Type `sqlplus` and press **Enter**.
- c** Log in as an administrative user (e.g. `sys` or `ICDBA`)
- d** Execute the following command:  

```
select network_service_banner from v$session_connect_info where
sid in (select distinct sid from v$mystat);
```
- e** Verify that the output is similar to this:

```
NETWORK_SERVICE_BANNER
```

```


```

```
Windows NT TCP/IP NT Protocol Adapter for 64-bit Windows: Version
12.1.0.1.0 - Production
```

```
Authentication service for 64-bit Windows: Version 12.1.0.1.0 -
Production
```

```
NTS Authentication service adapter for 64-bit Windows: Version
2.0.0.0.0 - Production
```

```
Encryption service for 64-bit Windows: Version 12.1.0.1.0 -
Production
```

```
AES256 Encryption service adapter for 64-bit Windows: Version
12.1.0.1.0 - Production
```

```
NETWORK_SERVICE_BANNER
```

```


```

```
Crypto-checksumming service for 64-bit Windows: Version 12.1.0.1.0
- Production
```

```
6 rows selected.
```

## Transparent Data Encryption with Oracle

Transparent Data Encryption (TDE) encrypts the database files and backups (when you create them after encrypting the database) as to avoid that data can be stolen by

retrieving the database file or backup. During the process, you need to create an Oracle wallet. It is essential to store its password in a safe location. For enabling TDE you need the following:

- Access to the Dimensions RM server as an administrator
- Oracle SqlPlus
- User name and password of a Dimensions RM administrator user
- The password of the ICDBA user



#### IMPORTANT!

During the process, Dimensions RM and any other web application running on the same server will not be available to users.

Enabling TDE consists of these steps:

- 1 Prepare for TDE:
  - a Stop Dimensions RM services.
  - b Create a backup with RM Manage as to be able to restore the database in case of issues.
- 2 Enabling TDE:
  - a Create a Certificate
  - b Backup the master key
  - c Backup the certificate
  - d Encrypt the database
- 3 Verification and Starting Dimensions RM
  - a Verify that the database can be accessed
  - b Start Dimensions RM services

### ***Preparing for Transparent Data Encryption***



#### IMPORTANT!

The following steps are to ensure that there is no database access during the encryption process and that you are able to restore the data in case encryption fails.

To prepare for Transparent Data Encryption:

- 1 Open a Remote Desktop connection to the Dimensions RM server.
- 2 Stop the following services in this order:
  - Dimensions RM SyncEngine and any other SyncEngine services

- Dimensions RM Common Tomcat
  - Dimensions RM Dimensions RM Pool Manager
  - Dimensions RM ALF Event Emitter
  - Dimensions RM E-Mail Notification Service
- 3 Start RM Manage.
  - 4 Create a backup of your database as described in chapter ["Backing Up an Instance Account under MS SQL Server" on page 738](#). This backup will **not** be encrypted.
  - 5 Close RM Manage.
  - 6 Open a command prompt as an administrator and execute the following command:  
`taskkill /f /im rmLicenseAgent.exe`  
 Alternatively, you can terminate all rmLicenseAgent.exe instances in Task Manager.

### Enabling Transparent Data Encryption



#### IMPORTANT!

Before you execute the steps below, ensure that you executed the steps described in chapter ["Preparing for Transparent Data Encryption" on page 861](#).

#### To enable Transparent Data Encryption (TDE):

- 1 Log in (e.g. by a Remote Desktop connection) to the Oracle database server.
- 2 Open a command prompt.
- 3 Change to your Oracle home directory, e.g.  
`C:\app\ORACLEAdmin\product\12.1.0\dbhome_1.`
- 4 Type the following command and press **Enter**: `md tde_wallet`
- 5 Type the following command (all on one line) and press **Enter**:  
`orapki wallet create`  
`-wallet "$ORACLE_HOME\tde_wallet" -pwd myPass -auto_login_local`



#### NOTE

**Replace** `$ORACLE_HOME` with the full path to your Oracle home directory.

**Replace** `myPass` with your preferred password and take a note of that password.

- 6 Type `sqlplus` and press **Enter**.
- 7 Log in as an administrator, e.g. `sys@RM as sysdba`  
 Change the database from `RM` to your database name.

- 8 Type the following commands and hit **Enter**:

```
ALTER SYSTEM SET
WALLET_ROOT='C:\app\ORACLEAdmin\product\12.1.0\dbhome_1\tde_wallet'
SCOPE=SPFILE SID='*';
```

**NOTE**

Replace the path with the path matching your environment.

```
ALTER SYSTEM SET TDE_CONFIGURATION="KEYSTORE_CONFIGURATION=FILE"
SCOPE=BOTH SID='*';

ADMINISTER KEY MANAGEMENT CREATE KEYSTORE IDENTIFIED BY myStorePass;
```

**NOTE**

Replace *myStorePass* with your preferred password and take a note of that password. Use this password for all commands that use *myStorePass*.

```
ADMINISTER KEY MANAGEMENT CREATE AUTO_LOGIN KEYSTORE FROM KEYSTORE
'C:\app\ORACLEAdmin\product\12.1.0\dbhome_1\tde_wallet' IDENTIFIED
BY myStorePass;
```

**NOTE**

**Replace** the path with the path matching your environment.

**Replace** *myStorePass* with the keystore password.

```
ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY
myStorePass;
```

**NOTE**

Replace *myStorePass* with your preferred password and take a note of that password. Use this password for all commands that use *myStorePass*.

```
SELECT STATUS FROM V$ENCRYPTION_WALLET;
```

```
ADMINISTER KEY MANAGEMENT SET KEY IDENTIFIED BY myKeyPass WITH BACKUP
USING 'key_backup';
```

**NOTE**

Replace *myKeyPass* with your preferred password and take a note of that password.

```
SELECT STATUS FROM V$ENCRYPTION_WALLET;
```

```
ALTER TABLESPACE RMDEMO ENCRYPTION ONLINE USING 'AES256' ENCRYPT
FILE_NAME_CONVERT = ('RMDEMO01-30-2022-184736.DBF',
'RMDEMO01-30-2022-184736_ENC.DBF');
```

**NOTE**

**Replace** the tablespace *RMDEMO* with the tablespace you wish to encrypt.

**Replace** the first file name with the file name that contains the tablespace data you wish to convert.

**Replace** the second file name with a new file name, reflecting the tablespace. It must be different from the first file name. To show that it contains encrypted data, we recommend to add "\_ENC" to the first file name.

- 9 Repeat the ALTER TABLESPACE command for all tablespaces you want to encrypt.
- 10 Type `exit` and press **Enter**.
- 11 Restart the database service.
- 12 Delete the unencrypted DBF files (only those that were replaced by their encrypted counterparts). For the example above, you would delete the *RMDEMO01-30-2022-184736.DBF* file.

### **Verification and Starting Dimensions RM**

- 1 Verify the functionality of Dimensions RM by executing these steps:
  - a Start RM Manage.
  - b Log in with user name and password of an administrator.
- 2 If the verification in step 1 is successful, start the following services in this order:
  - Dimensions RM Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM ALF Event Emitter (if it was running before)
  - Dimensions RM E-Mail Notification Service (if it was running before)

- Dimensions RM SyncEngine and any other SyncEngine services (if these services were running before)

## MS SQL Server Database Security

This section contains the following:

- ["Transport Encryption with MS SQL Server" on page 859](#)
- ["Transparent Data Encryption with MS SQL Server" on page 860](#)
- ["Installing a Certificate for SQL Server 2016 or 2017" on page 863](#)
- ["Installing a Certificate for SQL Server 2019" on page 865](#)

### Transport Encryption with MS SQL Server

Dimensions RM can connect to Microsoft SQL Server using Transport Layer Security (TLS). A TLS connection encrypts the data and thus prevents that data transmitted through a database connection can be read by other parties. Using TLS requires a server certificate, which must match the prerequisites (see chapter ["Prerequisites" on page 859](#)). Then configure the SQL server machine(s) as described below:

- **SQL Server 2019:** see chapter ["Installing a Certificate for SQL Server 2016 or 2017" on page 863](#)
- **SQL Server 2016/2017:** see chapter ["Installing a Certificate for SQL Server 2019" on page 865](#)

#### Prerequisites

To be able to use Transport Encryption, you require a certificate for the SQL Server. The certificate must meet the following conditions:

- **The certificate must be issued for Server Authentication (1.3.6.1.5.5.7.3.1).**
- **The certificate must be a legacy certificate.** This means that the certificate was created using the **KeySpec** option **AT\_KEYEXCHANGE**. In most cases, the **KEY\_USAGE** property will include key encipherment (**CERT\_KEY\_ENCIPHERMENT\_KEY\_USAGE**).
- The **Subject** property of the certificate must show that the common name is either the host name (e.g. mydbserver) or the fully qualified domain name (e.g. mydbserver.mydomain.com) of the machine running SQL Server. If SQL Server is running on a failover cluster, the common name must be either the host name, or the fully qualified domain name of the virtual server and the certificate must be provisioned on all nodes in the failover cluster.
- The **Valid from** and **Valid to** properties of the certificate must define a time range for that covers the current system time.
- By default, Microsoft SQL Server does not support wildcard certificates. To use wildcard certificates, please refer to the Microsoft SQL Server documentation.
- All CA certificates (root CA and intermediate CA certificates) of the server certificate must be valid (Valid from/Valid to properties) and recognized by Windows. If any of them is not recognized, import them into the Windows Certificate Store as described

in chapter ["Importing Root and Intermediate CA into Local Certificate Store"](#) on page 843.

If you do not have the root CA/intermediate CA certificate files, see chapter ["Retrieving Root CA and Intermediate CA Certificate Files"](#) on page 841 for further information.

## Transparent Data Encryption with MS SQL Server

Transparent Data Encryption (TDE) encrypts the database files and backups (when you create them after encrypting the database) as to avoid that data can be stolen by retrieving the database file or backup. During the process, you need to create a certificate. It is essential to store this certificate and its password in a safe location. For enabling TDE you need the following:

- Access to the Dimensions RM server as an administrator
- SQL Server Management Studio
- User name and password of a Dimensions RM administrator user
- The password of the ICDBA user



### IMPORTANT!

During the process, Dimensions RM and any other web application running on the same server will not be available to users.

Enabling TDE consists of these steps:

- 1** Prepare for TDE:
  - a** Stop Dimensions RM services.
  - b** Create a backup with RM Manage as to be able to restore the database in case of issues.
- 2** Enabling TDE:
  - a** Create a Certificate
  - b** Backup the master key
  - c** Backup the certificate
  - d** Encrypt the database
- 3** Verification and Starting Dimensions RM
  - a** Verify that the database can be accessed
  - b** Start Dimensions RM services



## Preparing for Transparent Data Encryption



### IMPORTANT!

The following steps are to ensure that there is no database access during the encryption process and that you are able to restore the data in case encryption fails.

### To prepare for Transparent Data Encryption:

- 1 Log in (e.g. by a Remote Desktop connection) to the Dimensions RM server.
- 2 Stop the following services in this order:
  - Dimensions RM SyncEngine and any other SyncEngine services
  - Dimensions RM Common Tomcat
  - Dimensions RM Dimensions RM Pool Manager
  - Dimensions RM ALF Event Emitter
  - Dimensions RM E-Mail Notification Service
- 3 Start RM Manage.
- 4 Create a backup of your database as described in ["Restoring an Instance Account under MS SQL Server" on page 745](#). This backup will **not** be encrypted.
- 5 Close RM Manage.
- 6 Open a command prompt as an administrator and execute the following command:
 

```
taskkill /f /im rmLicenseAgent.exe
```

Alternatively, you can terminate all rmLicenseAgent.exe instances in Task Manager.

## Enabling Transparent Data Encryption



### IMPORTANT!

Before you execute the steps below, ensure that you executed the steps described in chapter ["Preparing for Transparent Data Encryption" on page 861](#).

### To enable Transparent Data Encryption (TDE):

- 1 Start SQL Server Management Studio and log in as an administrative user, e.g. "sa".
- 2 Create master key and certificate by executing these steps:
  - a Click **New Query**. This opens a new **SQLQuery** window.
  - b Insert the following commands into the **SQLQuery** window:
 

```
USE master;
GO
```

```
CREATE MASTER KEY ENCRYPTION BY PASSWORD = '<Use strong password here>';
```

GO

```
CREATE CERTIFICATE MyServerCert WITH SUBJECT = 'My DEK
Certificate';
```

GO

- c Specify the password and change the subject if desired.
        - d Click **Execute**.
        - e Take a note of the password.
  - 3 Backup the master key and certificate by executing these steps:
    - a Click **New Query**. This opens a new **SQLQuery** window.
    - b Insert the following command into the empty **SQLQuery** window:

```
BACKUP MASTER KEY TO FILE = 'C:\db_master.key' ENCRYPTION BY
PASSWORD = 'password'

GO

BACKUP CERTIFICATE MyServerCert TO FILE = 'C:\db_TDE.cer'
WITH PRIVATE KEY
(
 FILE = 'C:\db_TDE.key',
 ENCRYPTION BY PASSWORD = 'password'
)

GO
```
    - c Click **Execute**.
    - d Take a note of the passwords and store them in a secure place.
    - e Store db\_master.key, db\_TDE.cer, and db\_TDE.key in a secure place.
  - 4 Enabling TDE by executing these steps:
    - a Click **New Query**. This opens a new **SQLQuery** window.
    - b Insert the following commands into the empty **SQLQuery** window:

```
USE RM;

GO

CREATE DATABASE ENCRYPTION KEY
WITH ALGORITHM = AES_256
ENCRYPTION BY SERVER CERTIFICATE MyServerCert;

GO

ALTER DATABASE RM
SET ENCRYPTION ON;
```

GO

- c Replace the database name "RM" with the name of your database.
- d Click **Execute**.

### **Verification and Starting Dimensions RM**

- 1 Verify the functionality of Dimensions RM by executing these steps:
  - a Start RM Manage.
  - b Log in with user name and password of an administrator.
- 2 If the verification in step 1 is successful, start the following services in this order:
  - Dimensions RM Dimensions RM Pool Manager
  - Dimensions RM Common Tomcat
  - Dimensions RM ALF Event Emitter (if it was running before)
  - Dimensions RM E-Mail Notification Service (if it was running before)
  - Dimensions RM SyncEngine and any other SyncEngine services (if these services were running before)

## **Installing a Certificate for SQL Server 2016 or 2017**

**To install a certificate for SQL Server 2016 or 2017, do the following:**

- 1 Ensure that the certificate matches the prerequisites and is valid and recognized by Windows (see chapters ["Retrieving Root CA and Intermediate CA Certificate Files" on page 841](#) and ["Importing Root and Intermediate CA into Local Certificate Store" on page 843](#)).
- 2 On the server, open a command prompt.
- 3 Enter mmc and press **Enter** to start the Microsoft Management Console.
- 4 From the **File** menu, select **Add/Remove Snap-in...** or press **Ctrl+M**.
- 5 From the list **Available snap-ins**, select **Certificates**.
- 6 Click **Add**.
- 7 In the **Certificates snap-in** dialog, do the following:
  - a Select **Computer account**.
  - b Click **Next**.
  - c Ensure that option **Local computer: (the computer this console is running on)** is selected.
  - d Click **Finish**.
- 8 Click **OK**.
- 9 Expand **Certificates (Local Computer)**.
- 10 Expand **Personal**.

- 11 Select **Certificates**, if it exists. This lists all personal certificates and allows you to check if the certificate has been imported before.
- 12 Right-click **Personal**. This opens a shortcut menu.
- 13 Point to **All Tasks**, then select **Import...**. This opens the **Certificate Import Wizard**.
- 14 Click **Next**.
- 15 Click **Browse...**. This opens the **Open** dialog.
- 16 In the file filter box, select **Personal Information Exchange (\*.pfx;\*.p12)**.
- 17 Select the PFX certificate and click **Open**.
- 18 Click **Next**.
- 19 Enter the password into the **Password** box.
- 20 Select the option **Make this key exportable. This will allow you to back up or transport your keys at a later time**.
- 21 Ensure that the option **Allow this certificate to be exported** is selected.
- 22 Click **Next**.
- 23 Ensure the following:
  - a The option **Place all certificates in the following store** is selected.
  - b The **Certificate store** box shows **Personal**.If this is not the case, do the following:
  - c Select the option **Place all certificates in the following store**.
  - d Click **Browse...**. This opens the **Select Certificate Store** dialog.
  - e Select **Personal** and click **OK**.
- 24 Click **Next**.
- 25 Click **Finish** and confirm the success message.
- 26 In the tree, expand **Personal**.
- 27 Select **Certificates**.
- 28 Right-click the imported server certificate. This opens a shortcut menu.
- 29 Point to **All Tasks**, then select **Manage Private Keys**. This opens the **Permissions** dialog.
- 30 If the SQL Server service account is not listed in the **Group or user names** list, do the following:
  - a Click **Add...**. This opens the **Select Users or Groups** dialog.
  - b Enter the SQL Server service account name into the **Enter the object name to select** box and click **Check Names**. This completes the user name and underlines it.
  - c Ensure that the added user is selected.

- d Revoke **Full control**, if it is selected.
- e Grant **Read**, if it is not selected.
- f Click **OK**.

**31** Restart the **SQL Server (<instance name>)** service.

**32** If using several SQL Server machines, repeat above steps on each machine.

## Installing a Certificate for SQL Server 2019

To install a certificate for SQL Server 2019, do the following:

- 1** Ensure that the certificate matches the prerequisites and is valid and recognized by Windows (see chapters ["Retrieving Root CA and Intermediate CA Certificate Files" on page 841](#) and ["Importing Root and Intermediate CA into Local Certificate Store" on page 843](#)).
- 2** Start **SQL Server Configuration Manager**.
- 3** Expand **SQL Server Network Configuration**.
- 4** Right-click **Protocol for <instance name>**, and then select **Properties**. This opens the **Protocols for <instance name> Properties** dialog.
- 5** Select the **Certificate** tab.
- 6** Select the certificate from the **Certificate** drop-down.

If the certificate is not available in the list, do the following:

- a Click **Import**. This opens the **Select Certificate** wizard.
- b From the **Select Certificate Type** section, select the option that matches your certificate file.
- c If you are installing the certificate for a single node, click **Browse** and select certificate file. Then skip to step e.
- d If you are installing a certificate for each node, click **Next** to list possible owner nodes. Then, select the nodes you wish to install the certificate for.
- e Click **Next**.
- f If required, specify the certificate password and click **Next**.
- g Click **Next** to import the certificate.
- h Click **Finish**.



### NOTE

After import, the certificate is not shown in the **Certificate** drop-down.

**7** Click **OK**.

**8** Restart the **SQL Server (<instance name>)** service.

## PostgreSQL Database Security

### ***Transport Encryption with PostgreSQL***

Transport encryption is available if your PostgreSQL server has been compiled to support it. For further details about transport encryption, see the PostgreSQL documentation.

### ***Transparent Data Encryption with PostgreSQL***

PostgreSQL does not support Transparent Data Encryption (TDE).

## Appendix C

---

# Troubleshooting

|                                                            |     |
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## Password May be Incorrect in Security File...

The full error raised: "Password May be Incorrect in Security File or Security File May Not be Found"

The database encryption feature is a security measure designed to address the fact that there was a static, hard-coded password for the ICADMIN Oracle account. Before this feature was implemented, this hard-coded password was called by the Dimensions RM tools. With database password encryption, a customer can change the password for these accounts at any time, keeping them fully secure. For more information about database password encryption, see ["Database Password Encryption" on page 768](#).

There are situations in which you may receive the "Password May be Incorrect in Security File or Security File May Not be Found" error when logging in to a Dimensions RM tool. The following table describes such scenarios and provides ways you can correct the problem.

| Case | Potential Problem                                                                      | Troubleshooting Procedure                                                                                                                                                                                                                                                                                                                                                                            |
|------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | No Dimensions RM instance exists on the server.                                        | Make sure you have a Dimensions RM instance on the server. You can test for this by selecting your database instance in RM Manage, right clicking, and selecting <b>Change User</b> from the context menu. If you get the same error message instead of a prompt to log in, then RM Manage is not able to connect to the database instance, or there is no active instance available for connection. |
| 2    | The security file could be in the wrong location.                                      | In RM Manage, select <b>Workspace   Options</b> . Click the <b>Security</b> tab and verify the location and name of the security file.                                                                                                                                                                                                                                                               |
| 3    | The database instance might need to be updated to match the current security settings. | In RM Manage, select the database instance, right-click, and select <b>Convert Database</b> . When the database validation tool starts, select your instance and click <b>Upgrade</b> . When it prompts whether you want to recreate the stored procedures, click <b>Yes</b> .                                                                                                                       |
| 4    | The ICADMIN account could be locked.                                                   | In SQL Plus, try to log in as ICADMIN by typing the following command:<br><br><pre>sqlplus icadmin/&lt;dummy password&gt;@&lt;database instance&gt;</pre> If Oracle returns a message that the account is locked, type the following commands to unlock it:<br><br><pre>sqlplus icdba/icdba@&lt;database instance&gt; alter user icadmin account unlock; exit</pre>                                  |
| 5    | The Dimensions RM or Oracle path could be wrong.                                       | In RM Manage, select <b>Workspace   Options</b> . Click the <b>Mandatory</b> tab, and confirm that the <b>RTM_HOME</b> and <b>ORACLE_HOME</b> values are correct.                                                                                                                                                                                                                                    |



## Using CAC and Unable to Perform RM Browser User Management

Some RM Browser functions are executed using Web Services, e.g., User Management and Attribute Settings. In some CAC enabled environments, these functions could fail to return data.

The solution requires the creation of a registry entry on the RM Server:

- 1 In the following location: HKEY\_LOCAL\_MACHINE\SOFTWARE\Open Text\Dimensions RM\Environment\Default
- 2 Create registry entry: CRM\_INTERNAL\_WS\_URL
- 3 Assign the value: http://localhost:8080/
- 4 Restart **Dimensions RM Common Tomcat** service.

## Unable to create ICDBA Account or RM Instance

When using an **Oracle database with containers**, the following error messages may occur:

- **Cannot create ICDBA in CDB\$ROOT container**

When using containers, you must configure the Oracle client's tnsnames.ora file accordingly. For further information, see chapter *"64-Bit Oracle Client Installation with a Fresh Installation"* in the *Dimensions RM Installation Guide*.

- **ORACLE initialization or shutdown in progress**

If you receive this error when selecting the database container in RM Manage and trying to create the ICDBA account, this means that the container is not prepared for use. For further information, see chapter *Preparing an Existing Container for Dimensions RM* in the *Dimensions RM Installation Guide*.

## RM Browser hangs when Exporting Documents

Under certain conditions RM Browser might hang when exporting documents. After preparing the server, it might be necessary to cancel existing **winword.exe** tasks on the server.

### ***Windows Server is not prepared for Microsoft Office***

RM Browser hangs on creating a document, if the server has not been prepared for exporting documents. For information on how to prepare your server, refer to *"Support for Export/Import"* in the *Dimensions RM Installation Guide*.

### ***Adobe Reader is installed on Windows Server***

If the document contains PDF file as file attachment of a requirement, RM Browser might hang. For instructions on how to prevent Adobe Reader affecting exporting documents, see *"Using Adobe Reader on Windows Server"* in the *Dimensions RM Installation Guide*.

### **A Server Upgrade has Broken Office**

Server Upgrades can cause application issues, and if the Dimensions System Administrator does not have access to the server, such issues can be difficult to overcome.

Recently, a server upgrade broke the Word/Excel install such that when RM users tried the export files, the attempt would hang RM. In response to this and other issues, we are providing the System Administrator with an option to Disable Word until the larger issue is identified and corrected.

The registry setting is: **MSOFFICE\_PROCESSING**

- **FALSE** - processing is disabled
- **TRUE** - processing is enabled

## **Exporting Documents creates DOC Files**

If Microsoft Word is not installed on the server or the installed version is no longer supported, a DOC rather than a DOCX file will be created.

Please export using Word Document (Beta). This export option is using the Docx4j Java Library used for creating and manipulating Office OpenXML files.

## **Export of Requirements creates XLS Files**

The export process creates XLS files if Microsoft Excel is not installed on the server, or if the installed version is not supported.

## **Unable to Export Dashboards**

To export dashboards as Microsoft PowerPoint files, a supported version of Microsoft PowerPoint must be installed on the server.

To export dashboards as an Adobe PDF, Microsoft Word must be installed on the server

## **Word cannot open Documents**

If Documents contain many lists or sub-documents (which are complete Word documents within another Word document), it is possible that Word is unable to open this document. In this case, you can configure a Word document post processing step which executes on the Dimensions RM server and corrects these problems in the Word document. Note that

this will increase export time. For further information on Word document post processing, see chapter "Word Document Post Processing" on page 889.

## RM Manage crashes when connecting to Dimensions CM

This issue occurs if the Dimensions CM Client version is not compatible with Dimensions RM. For a list of supported Dimensions CM clients, see the platform matrix at <https://www.microfocus.com/documentation/dimensions-rm/>.

## Unable to Re-login in Firefox

When using Firefox and a login name or password that has non-ASCII characters (e.g. Chinese characters or German umlauts), users cannot login in the provided login popup dialog. The issue that non-ISO-8859-1 characters are not supported is tracked by the Firefox team as bug #41489.

## Addressing Database Performance

### For all Supported Databases

Dimensions RM Database Engineers are focused on improving the User Experience, and that includes improving database performance.

Regular database maintenance is also crucial for maintaining optimal performance. This involves developing a regularly scheduled maintenance plan, which includes implementing actions from the official database documentation.

### MS SQL Server Performance Issues

#### General Maintenance



#### **IMPORTANT!**

**SQL Server requires regular, qualified maintenance to maintain Dimensions RM performance.**

The maintenance plan must include recommended steps from the official documentation:

<https://learn.microsoft.com/en-us/sql/relational-databases/indexes/reorganize-and-rebuild-indexes?view=sql-server-ver16>

- Very important for RM performance: "Optimize index maintenance to improve query performance and reduce resource consumption."
- SQL indexes are one of the greatest resources when it comes to performance gain, however, they degrade over time. SQL Server has a **Rebuild Index Task**

(Maintenance Plan), which should be run monthly or quarterly, depending on database load.

### **SQL Server Browser Service**

When using SQL Server with named instances or SQL Server Express, the **SQL Server Browser** service must be active.

**To activate the SQL Server Browser service, execute the following steps:**

- 1** Connect to the machine running SQL Server.
- 2** Open a command prompt.
- 3** Type `services.msc` and press **Enter**.
- 4** Double-click the **SQL Server Browser** service.
- 5** Ensure that the **Startup type** box shows **Automatic**.
- 6** If the **Apply** button is enabled, click **Apply**.
- 7** If the **Start** button is enabled, click **Start**.
- 8** Click **OK**.

# URL Syntax

# How to Manually Specify a URL for URL Addressable Views

Instructions for copying the URL for can be found throughout this guide for copying the URL for various objects:

- ["Copying the URL of a Requirement to the Clipboard" on page 111](#)
- ["Copying the URL of a Document to the Clipboard" on page 226](#)
- ["Creating a Dashboard URL" on page 308](#)
- ["Copying the URL of a Report to the Clipboard" on page 355](#)
- ["Copying the URL of a Collection or Baseline to the Clipboard" on page 381](#)

However, if you wish to enter a URL by hand or use a script or program to invoke them, see the following for information on the correct syntax.

**NOTE**

If an object name includes a space character, replace the space with: %20.

## URL to a Document

```
http://ServerName/rtmBrowser/
app?goto=doc&db=DataBaseName&proj=InstanceName&doc=DocumentName
```

## URL to a Chapter of a Document

```
http://ServerName/rtmBrowser/
app?goto=doc&db=DataBaseName&proj=InstanceName&doc=DocumentName&class=Chapter&o=ChapterID
```

## URL to a Chapter, Requirement of a Document

```
http://ServerName/rtmBrowser/
app?goto=doc&db=DataBaseName&proj=InstanceName&docID=19&c=1&puid=MRKT_000040
```

## URL to a Snapshot of a Document

```
http://ServerName/rtmBrowser/
?goto=doc&db=DataBaseName&proj=InstanceName&doc=SnapshotName
```

## URL to Export a Document

```
http://ServerName/rtmBrowser/cgi-bin/
rtmBrowser.exe?&goto=publishdoc&db=DataBaseName&proj=InstanceName&docID=DocumentID&ic__saveAsOptions=doc
```

## URL to a Collection

```
http://ServerName/rtmBrowser/
?goto=collection&db=DataBaseName&proj=InstanceName&collection=CollectionName
```

After pasting the URL into a file or application, you can also add parameters to it, which allows additional features. If you do not supply run-time parameters in the URL, you can specify them when running the report.

| Function       | Description                                                                                                                                                                                 | Example URL                                                                                                                            |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Editable Grid  | By default, the requirements of collection or baseline are shown in a normal table. To use an editable grid instead, add <b>&amp;editableGrid=true</b> to the URL.                          | http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=collection&db=ORCL&proj=RMDEMO&collection=CollectionName&editableGrid=true |
| Hide Title Bar | By default, the collection or baseline shows a title bar with information about database, instance and path to the report. To hide the title, add <b>&amp;hideTitleBar=true</b> to the URL. | http://myserver:8080/rtmBrowser/cgi-bin/rtmBrowser.exe?goto=collection&db=ORCL&proj=RMDEMO&collection=CollectionName&hideTitleBar=true |

## URL to a Specific Version of a Requirement

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Requirement'sPUID&ver=VersionNumber
```

**NOTE:** If no version is specified, it will default to 1.

## URL to compare History Versions of a Requirement

### *Compare Requirement by Object Ids*

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&o=ObjectID1
&comparewithID=ObjectID2
```

### *Compare Current Requirement with Object Id*

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Requirement'sPUID&comparewithID=ObjectID
```

### *Compare Requirement by Object Id and Version*

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&o=ObjectID&comparewith=Version
```

**Compare Two Versions of a Requirement**

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Requirement'sPUID&ver=Version1&comparewith=Version2
```

**Compare Current Requirement with a Version**

```
http://ServerName/rtmBrowser/
?goto=req&db=DataBaseName&proj=InstanceName&class=ClassName&puid=Requirement'sPUID&comparewith=Version
```

## Specifying User Name and Password on an URL

For requirements, reports, collections, documents, snapshots, and to export documents, you can specify user name and password as part of the URL. This automatically logs you in and opens the requested item. Note that for login you also need to specify database name and instance name.

| Option | Description  | Example  |
|--------|--------------|----------|
| u=     | RM user name | u=ephoto |
| pwd=   | RM password  | pwd=rtm  |



## URL to the Current Version of a Requirement

`http://ServerName/rtmBrowser/  
?d=DataBaseName&p=InstanceName&f=2&c=ClassID&id=Requirement'sPUIID&u  
=UserName&pwd=Password`



### NOTE

This type of URL uses an older syntax that is different from the others. See the table below for more details on the options available in this syntax.

| Option | Description                                                                                                                                                                                                                | Example  |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| d=     | Oracle database that RM uses                                                                                                                                                                                               | d=RTM    |
| pid=   | RM instance ID number. You can specify pid= or p=, but not both (see "p=" below)                                                                                                                                           | pid=2    |
| p=     | RM instance name. You can specify pid= or p=, but not both (see "pid=" above)                                                                                                                                              | p=RMDEMO |
| f=     | RM Action to perform. <ul style="list-style-type: none"> <li>■ f=2: Opens an object for viewing.</li> <li>■ f=4: Opens an edit dialog for the specified object.</li> <li>■ f=5: Opens the RM browser home page.</li> </ul> | f=2      |
| c=     | RM Class ID (this is a numeric value).                                                                                                                                                                                     | c=7      |
| o=     | RM Object ID (this is a numeric value).                                                                                                                                                                                    | o=21     |
| u=     | RM user name                                                                                                                                                                                                               | u=ephoto |
| pwd=   | RM password                                                                                                                                                                                                                | pwd=rtm  |



---

# Word Import Pre-Processing

|                           |     |
|---------------------------|-----|
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| Settings                  | 880 |

---

## About Word Pre-Processing

When importing Word documents or requirements from Word documents, the HTML code Microsoft® Word contains extra tags and styles. Word Import Pre-Processing is provided by the WordProcessing.dll file which is used by the import facilities.

## Settings

The following sections describe the settings which are configured through the WordImportSettings.xml file, which resides in the <RM Install Dir>\conf folder. This configuration file is in XML format and must be edited with a text editor, e.g. Notepad.

| Setting                 | Description                                                                                                                                                                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AllowEmptyListItems     | If enabled, Word Import Pre-Processing allows list items without content.<br><b>Possible values:</b> <ul style="list-style-type: none"><li>■ false</li><li>■ true</li></ul> <b>Default: false</b> (turned off).                                       |
| ConvertImages           | If enabled, Word Import Pre-Processing converts images in WMF or EMZ format to PNG.<br><b>Possible values:</b> <ul style="list-style-type: none"><li>■ false</li><li>■ true</li></ul> <b>Default: true</b> (turned on).                               |
| ConvertWordListsToLists | If enabled, Word Import Pre-Processing converts HTML lists to Word lists.<br><b>Possible values:</b> <ul style="list-style-type: none"><li>■ false</li><li>■ true</li></ul> <b>Default: true</b> (turned on).                                         |
| CorrectPNGImages        | If enabled, Word Import Pre-Processing checks if PNG images are faulty. If possible, a faulty PNG image is fixed.<br><b>Possible values:</b> <ul style="list-style-type: none"><li>■ false</li><li>■ true</li></ul> <b>Default: true</b> (turned on). |

| Setting                | Description                                                                                                                                                                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RemoveComments         | <p>If enabled, Word Import Pre-Processing removes all comments.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ false</li> <li>■ true</li> </ul> <p><b>Default: true</b> (turned on).</p>                                        |
| RemoveIfEndif          | <p>If enabled, Word Import Pre-Processing removes all [if ...] and [endif] tags.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ false</li> <li>■ true</li> </ul> <p><b>Default: true</b> (turned on).</p>                       |
| RemoveOfficeParagraphs | <p>If enabled, Word Import Pre-Processing removes all O:P tags, preserving the content.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ false</li> <li>■ true</li> </ul> <p><b>Default: true</b> (turned on).</p>                |
| RemoveTableSize        | <p>If enabled, Word Import Pre-Processing removes the width setting for tables</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ false</li> <li>■ true</li> </ul> <p><b>Default: true</b> (turned on).</p>                         |
| RemoveVfTags           | <p>If enabled, Word Import Pre-Processing removes V:F tags and any parent tags in the "V" namespace.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ False</li> <li>■ True</li> </ul> <p><b>Default: True</b> (turned on).</p>   |
| RemoveWordSections     | <p>If enabled, Word Import Pre-Processing removes any class name starting with WordSection or Section.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ false</li> <li>■ true</li> </ul> <p><b>Default: true</b> (turned on).</p> |

| Setting                  | Description                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ReplaceClassesWithStyles | <p>If enabled, Word Import Pre-Processing replaces classes for HTML tags in the Word document with styles. This setting corresponds with the <b>ReplaceClassWithStyles</b> setting in chapter <a href="#">"Selector Settings"</a> on page 884.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ false</li><li>■ true</li></ul> <p><b>Default: true</b> (turned on).</p> |
| ReplaceImages            | <p>If enabled, Word Import Pre-Processing replaces low-resolution images with their high-resolution counterparts if available.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ false</li><li>■ true</li></ul> <p><b>Default: true</b> (turned on).</p>                                                                                                                 |

| Setting                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WordBulletListStyle_L1...9  | <p>Defines the style for bullet lists. WordBulletListStyle_L1 stands for lists with level 1, WordBulletListStyle_L2 for lists with level 2, and so on. These list styles are only used for lists without a style definition in their UL tag.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ Bullet_Simple</li> <li>■ Bullet_Empty</li> <li>■ Bullet_Square</li> <li>■ Bullet_Color</li> <li>■ Bullet_Diamond</li> <li>■ Bullet_Arrow</li> <li>■ Bullet_Tick</li> </ul> <p><b>Defaults:</b><br/> <b>WordBulletListStyle_L1: Bullet_Simple</b><br/> <b>WordBulletListStyle_L2: Bullet_Empty</b><br/> <b>WordBulletListStyle_L3...9: Bullet_Square</b></p>                                                                                                                                                                                                                         |
| WordNumericListStyle_L1...9 | <p>Defines the style for numeric lists. WordNumericListStyle_L1 stands for lists with level 1, WordNumericListStyle_L2 for lists with level 2, and so on. These list styles are only used for lists without a style definition in their OL tag.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ Number_Simple</li> <li>■ Number_Parenthesis_Closing</li> <li>■ Number_Parenthesis_Surrounding</li> <li>■ Number_Abc_Lowercase</li> <li>■ Number_Abc_Lowercase_Parenthesis_Closing</li> <li>■ Number_Abc_Uppercase</li> <li>■ Number_Abc_Uppercase_Parenthesis_Closing</li> <li>■ Number_Roman_Capital</li> <li>■ Number_Roman_Lowercase</li> <li>■ Number_Greek_Lowercase</li> </ul> <p><b>Defaults:</b><br/> <b>WordNumericListStyle_L1: Number_Simple</b><br/> <b>WordNumericListStyle_L2: Number_Abc_Lowercase</b><br/> <b>WordNumericListStyle_L3...9: Number_Simple</b></p> |

| Setting          | Description                                                                                                                                                                                                                  |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CorrectImageSize | <p>If enabled, Word Import Pre-Processing resizes images to fit the page.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li></ul> <p><b>Default: True</b> (turned on).</p> |

## Selector Settings

Selector settings are used to remove attributes, classes, styles, or tags or to replace classes with styles. For comparing names and values, the following settings can be used:

- Contains
- Equals
- StartsWith

Tag names, attribute names and style names are compared case insensitive. To compare values case sensitive, set the related IgnoreCase setting (e.g. AttributeValueIgnoreCase) to true. To compare case insensitive, set the setting to false.



| Setting          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RemoveAttributes | <p>If configured, Word Import Pre-Processing removes all attributes that match the selectors.</p> <p><b>Default:</b></p> <pre> &lt;RemoveAttributes&gt;   &lt;Attribute&gt;     &lt;!--Removes all attributes with a     namespace.--&gt;     &lt;AttributeName&gt;:&lt;/AttributeName&gt;     &lt;AttributeNameComparison&gt;Contains&lt;/ AttributeNameComparison&gt;     &lt;AttributeValue /&gt;     &lt;AttributeValueComparison&gt;Equals&lt;/ AttributeValueComparison&gt;     &lt;AttributeValueIgnoreCase&gt;&gt;false&lt;/ AttributeValueIgnoreCase&gt;   &lt;/Attribute&gt; &lt;/RemoveAttributes&gt; </pre> |
| RemoveClasses    | <p>If configured, Word Import Pre-Processing removes all classes (entries from the class attribute) that match the selectors.</p> <p><b>Default:</b></p> <pre> &lt;RemoveClasses&gt;   &lt;Class&gt;     &lt;!--Removes all Office Mso classes.--&gt;     &lt;ClassName&gt;mso&lt;/ClassName&gt;     &lt;ClassNameComparison&gt;StartsWith&lt;/ ClassNameComparison&gt;     &lt;ClassNameIgnoreCase&gt;&gt;true&lt;/ ClassNameIgnoreCase&gt;   &lt;/Class&gt; &lt;/RemoveClasses&gt; </pre>                                                                                                                             |
| RemoveStyles     | <p>If configured, Word Import Pre-Processing removes all styles (entries from the style attribute) that match the selectors.</p> <p><b>Default:</b></p> <pre> &lt;RemoveStyles&gt;   &lt;Style&gt;     &lt;!--Removes all Office Mso styles.--&gt;     &lt;StyleName&gt;mso&lt;/StyleName&gt;     &lt;StyleNameComparison&gt;StartsWith&lt;/ StyleNameComparison&gt;     &lt;StyleValue /&gt;     &lt;StyleValueComparison&gt;Equals&lt;/ StyleValueComparison&gt;     &lt;StyleValueIgnoreCase&gt;&gt;false&lt;/ StyleValueIgnoreCase&gt;   &lt;/Style&gt; &lt;/RemoveStyles&gt; </pre>                                |

| Setting    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RemoveTags | <p>If configured, Word Import Pre-Processing removes all tags that match the selectors.</p> <p><b>Default:</b></p> <pre> &lt;RemoveTags&gt;   &lt;Tag&gt;     &lt;!--Removes all Office style tags--&gt;     &lt;TagName&gt;style&lt;/TagName&gt;     &lt;TagNameComparison&gt;Equals&lt;/ TagNameComparison&gt;     &lt;Attributes /&gt;     &lt;AttributeSelectionMode&gt;Any&lt;/ AttributeSelectionMode&gt;     &lt;Classes /&gt;     &lt;ClassesSelectionMode&gt;Any&lt;/ ClassesSelectionMode&gt;     &lt;Styles /&gt;     &lt;StylesSelectionMode&gt;Any&lt;/ StylesSelectionMode&gt;     &lt;PreserveChildren&gt;true&lt;/ PreserveChildren&gt;     &lt;RemoveOnlyIfEmpty&gt;false&lt;/ RemoveOnlyIfEmpty&gt;   &lt;/Tag&gt;   &lt;Tag&gt;     &lt;!--Removes all tags with a namespace and preserves the child nodes.--&gt;     &lt;TagName&gt;:&lt;/TagName&gt;     &lt;TagNameComparison&gt;Contains&lt;/ TagNameComparison&gt;     &lt;Attributes /&gt;     &lt;AttributeSelectionMode&gt;Any&lt;/ AttributeSelectionMode&gt;     &lt;Classes /&gt;     &lt;ClassesSelectionMode&gt;Any&lt;/ ClassesSelectionMode&gt;     &lt;Styles /&gt;     &lt;StylesSelectionMode&gt;Any&lt;/ StylesSelectionMode&gt;     &lt;PreserveChildren&gt;true&lt;/ PreserveChildren&gt;     &lt;RemoveOnlyIfEmpty&gt;false&lt;/ RemoveOnlyIfEmpty&gt;   &lt;/Tag&gt; &lt;/RemoveTags&gt; </pre> |

| Setting                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ReplaceClassWithStyles | <p>If configured, Word Import Pre-Processing sets styles for the specified all class (entry from the class attribute).</p> <p>The <b>Mode</b> setting can have these values:</p> <ul style="list-style-type: none"> <li>■ Ignore</li> <li>■ RemoveClassOnly</li> <li>■ AddDocumentStyleOnly</li> <li>■ AddDocumentStyleAndRemoveClass</li> <li>■ AddSpecifiedStyleOnly</li> <li>■ AddSpecifiedStyleAndRemoveClass</li> <li>■ AddDocumentStyleOrSpecifiedStyleOnly</li> <li>■ AddDocumentStyleOrSpecifiedStyleOnlyAndRemoveClass</li> </ul> <p><b>Default:</b></p> <pre> &lt;ReplaceClassWithStyles&gt;   &lt;ReplaceClassWithStyle&gt;     &lt;TagName /&gt;     &lt;TagNameComparison&gt;Equals&lt;/ TagNameComparison&gt;     &lt;ClassName&gt;msolistparagraph&lt;/ ClassName&gt;     &lt;ClassNameComparison&gt;StartsWith&lt;/ ClassNameComparison&gt;     &lt;ClassNameIgnoreCase&gt;true&lt;/ ClassNameIgnoreCase&gt;     &lt;Mode&gt;AddDocumentStyleOnly&lt;/Mode&gt;     &lt;StyleValue /&gt;   &lt;/ReplaceClassWithStyle&gt;   &lt;ReplaceClassWithStyle&gt;     &lt;TagName /&gt;     &lt;TagNameComparison&gt;Equals&lt;/ TagNameComparison&gt;     &lt;ClassName&gt;*&lt;/ClassName&gt;     &lt;ClassNameComparison&gt;Equals&lt;/ ClassNameComparison&gt;     &lt;ClassNameIgnoreCase&gt;false&lt;/ ClassNameIgnoreCase&gt;     &lt;Mode&gt;AddDocumentStyleOnly&lt;/Mode&gt;     &lt;StyleValue&gt;&lt;/StyleValue&gt;   &lt;/ReplaceClassWithStyle&gt; &lt;/ReplaceClassWithStyles&gt; </pre> |



# Word Document Post Processing

|                                           |     |
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## Post Processing Overview

Dimensions RM provides the function to process the Word document before it is made available for download. For this purpose, two command line tools can be executed: Word Document Post Processor and Custom Word Document Post Processor. By default, Word Document Post Processor is enabled by the setup program when installing the Dimensions RM server. The Word document export process is executed in this order:

- 1 Create an HTML document.
- 2 Create an MHTML document. This document also contains images and file attachments.
- 3 Run Word Document Post Processor, if configured.
- 4 Run Custom Word Document Post Processor, if configured.
- 5 Create a document in DOCX or PDF format, if a supported version of Microsoft Word has been installed on the server.

## About Word Document Post Processor

Word Document Post Processor is a command line tool, which processes the temporary HTML file created in the export process. It expects only the path to an HTML file as a command line parameter. The file name of Word Document Post Processor is WordDocumentPostProcessor.exe.

**Word Document Post Processor provides these functions:**

- **Convert HTML lists (<ul> and <ol>) to Microsoft Word lists**  
Microsoft Word uses paragraphs (<p>) defined by class and style.
- **Remove unreferenced lists**  
Removes all list styles for which no list exists in the document.
- **Correct Empty Paragraphs**  
When exporting, empty paragraphs (<p></p>) may be present. These empty paragraphs are replaced by a style used by Word.
- **Correct image sizes**  
Images larger than the page width are resized. This function expects that the image is located in the main chapter. When images are within a table, it may be that the resized image are still too large, thus it is recommended to resize images accordingly when using them within a table.
- **Integrate sub-documents**  
When exporting requirements with a document, the requirements may have a full HTML document in HTML enabled text attributes. Word Document Post Processor merges these sub-documents and converts the encoding to match the main document.
- **Remove styles**  
Removes <style> tags from the body of the exported document.
- **Remove table size**  
Tables – especially tables with many columns – may exceed the page in the Word

document. Removing the table size allows Word to resize the columns. Most tables fit onto the page after removing the table size. However, if your table contains many long words, it may still exceed the page.

- **Remove WordSection1 or Section1**

Usually, a Word document has only one <div> tag with class WordSection1 or Section1 defined. If more than one WordSection1 or Section1 is found, the class will be removed from that tag. This leaves the content intact, but defines it as a standard element.

- **Remove V:F Tags and parent V:\* Tags**

V:F tags are used by Microsoft Word in combination with images. As Dimensions RM does not use V:F tags, these tags and surrounding tags (e.g. V:Formulas) can be removed to avoid any issues when opening the exported document.

### **Word Document Post Processor provides these support functions:**

- **Backup of the input file**

Word Document Post Processor creates a backup of the file which Word Document Post Processor will process. This file resides in the same directory as the original file. The file name contains the word "input" (e.g. wdp1913.input.tmp).

- **Backup of the output file**

Word Document Post Processor creates a backup of the file which Word Document Post Processor processed. This file resides in the same directory as the original file. The file name contains the word "output" (e.g. wdp1913.output.tmp).

- **Logging**

The log file WordDocumentPostProcessor.log resides in <RM Install Dir>\logs. Logging is configured in <RM Install Dir>\conf\log4net.config. For further information on configuration of logging, see chapter ["Log Files" on page 799](#).

## **Settings**

The following sections describe the settings which are configured through the WordDocumentPostProcessor.exe.config file, which resides in the <RM Install Dir>\bin folder. This config file is in XML format and must be edited with a text editor, e.g. Notepad.

Each setting is defined by the <setting> tag. Each setting is identified by its name attribute. A setting contains a <value> tag, which is used to configure the setting. The example below enables the **BackupInputFile** setting by setting it to **True**.

**Example:**

```
<setting name="BackupInputFile" serializeAs="String">
 <value>True</value>
</setting>
```

**List Settings**

| Setting                 | Description                                                                                                                                                                                                                                                               |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ConvertListsToWordLists | <p>If enabled, Word Document Post Processor converts HTML lists to Word lists.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li></ul> <p><b>Default: True</b> (turned on).</p>                                         |
| List_Styles             | <p>Contains styles which define the list layout. The IDs are required for Word Document Post Processor to recognize the lists. This setting should not be changed.</p>                                                                                                    |
| List_Style_L1...9       | <p>Defines the margin and indent for the list with the specified level. List_Style_L1 stands for lists with level 1, List_Style_L2 for lists with level 2, and so on.</p> <p><b>Default (for level 1): margin-left:72.0pt;mso-add-space:auto;text-indent:-18.0pt;</b></p> |
| RemoveStyles            | <p>If enabled, Word Document Post Processor removes &lt;style&gt; tags within the body of the document.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li></ul> <p><b>Default: True</b> (turned on).</p>                |
| RemoveUnreferencedLists | <p>If enabled, Word Document Post Processor removes styles for lists which are not present in the document.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li></ul> <p><b>Default: True</b> (turned on).</p>            |



| Setting                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WordBulletListStyle_L1...9  | <p>Defines the style for bullet lists. WordBulletListStyle_L1 stands for lists with level 1, WordBulletListStyle_L2 for lists with level 2, and so on. These list styles are only used for lists without a style definition in their UL tag.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ Bullet_Simple</li> <li>■ Bullet_Empty</li> <li>■ Bullet_Square</li> <li>■ Bullet_Color</li> <li>■ Bullet_Diamond</li> <li>■ Bullet_Arrow</li> <li>■ Bullet_Tick</li> </ul> <p><b>Defaults:</b><br/> <b>WordBulletListStyle_L1: Bullet_Simple</b><br/> <b>WordBulletListStyle_L2: Bullet_Empty</b><br/> <b>WordBulletListStyle_L3...9: Bullet_Square</b></p>                                                                                                                                                                                                                         |
| WordNumericListStyle_L1...9 | <p>Defines the style for numeric lists. WordNumericListStyle_L1 stands for lists with level 1, WordNumericListStyle_L2 for lists with level 2, and so on. These list styles are only used for lists without a style definition in their OL tag.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>■ Number_Simple</li> <li>■ Number_Parenthesis_Closing</li> <li>■ Number_Parenthesis_Surrounding</li> <li>■ Number_Abc_Lowercase</li> <li>■ Number_Abc_Lowercase_Parenthesis_Closing</li> <li>■ Number_Abc_Uppercase</li> <li>■ Number_Abc_Uppercase_Parenthesis_Closing</li> <li>■ Number_Roman_Capital</li> <li>■ Number_Roman_Lowercase</li> <li>■ Number_Greek_Lowercase</li> </ul> <p><b>Defaults:</b><br/> <b>WordNumericListStyle_L1: Number_Simple</b><br/> <b>WordNumericListStyle_L2: Number_Abc_Lowercase</b><br/> <b>WordNumericListStyle_L3...9: Number_Simple</b></p> |

**Image Settings**

| Setting                   | Description                                                                                                                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CorrectImageSize          | <p>If enabled, Word Document Post Processor resizes images to fit the page.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li></ul> <p><b>Default: True</b> (turned on).</p>                     |
| ImgSubstractWidthInPixels | <p>Defines the number of pixels which to subtract from an image when resizing it.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ Any integer (whole number) which is 0 or larger.</li></ul> <p><b>Default: 10.</b></p> |
| MarginLeft                | <p>Defines the width of the left margin. This setting is used for calculating the maximum image width. This setting accepts the following CSS formats: px, pt, in, mm, cm, and pc.</p> <p><b>Default: 1.25 in</b></p>                              |
| MarginRight               | <p>Defines the width of the right margin. This setting is used for calculating the maximum image width. This setting accepts the following CSS formats: px, pt, in, mm, cm, and pc.</p> <p><b>Default: 1.25 in</b></p>                             |
| PageHeight                | <p>Defines the height of the page. This settings is reserved for later use. This setting accepts the following CSS formats: px, pt, in, mm, cm, and pc.</p> <p><b>Default: 841.9 pt</b></p>                                                        |
| PageWidth                 | <p>Defines the width of the page. This setting is used for calculating the maximum image width. This setting accepts the following CSS formats: px, pt, in, mm, cm, and pc.</p> <p><b>Default: 595.3 pt</b></p>                                    |

## Other Settings

| Setting                | Description                                                                                                                                                                                                                                                                  |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CorrectEmptyParagraphs | <p>If enabled, Word Document Post Processor corrects empty paragraphs.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>False</li> <li>True</li> </ul> <p><b>Default: True</b> (turned on).</p>                                                     |
| IntegrateSubdocuments  | <p>If enabled, Word Document Post Processor integrates sub-documents into the main document and converts the the encoding.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>False</li> <li>True</li> </ul> <p><b>Default: True</b> (turned on).</p> |
| RemoveStyles           | <p>If enabled, Word Document Post Processor removes &lt;style&gt; tags within the body of the document.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>False</li> <li>True</li> </ul> <p><b>Default: True</b> (turned on).</p>                    |
| RemoveTableSize        | <p>If enabled, Word Document Post Processor removes the width setting for tables.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>False</li> <li>True</li> </ul> <p><b>Default: True</b> (turned on).</p>                                          |
| RemoveUnwantedTags     | <p>If enabled, Word Document Post Processor removes HTML undesired HTML tags.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"> <li>False</li> <li>True</li> </ul> <p><b>Default: True</b> (turned on).</p>                                              |

| Setting            | Description                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RemoveVfTags       | <p>If enabled, Word Document Post Processor removes V:F tags and any parent tags in the "V" namespace.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li></ul> <p><b>Default: True</b> (turned on).</p>                                                                                                                                                         |
| RemoveWordSection1 | <p>If enabled, Word Document Post Processor removes excess WordSection1 or Section1 class names.</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li></ul> <p><b>Default: True</b> (turned on).</p>                                                                                                                                                               |
| BackupInputFile    | <p>If enabled, Word Document Post Processor creates a backup of the file which Word Document Post Processor will process. This file resides in the same directory as the original file. The file name contains the word "input" (e.g. wdp1913.input.tmp).</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li><li>■ <b>Default: False</b> (turned off).</li></ul> |
| BackupOutputFile   | <p>If enabled, Word Document Post Processor creates a backup of the file which Word Document Post Processor processed. This file resides in the same directory as the original file. The file name contains the word "output" (e.g. wdp1913.output.tmp).</p> <p><b>Possible values:</b></p> <ul style="list-style-type: none"><li>■ False</li><li>■ True</li><li>■ <b>Default: False</b> (turned off).</li></ul>  |

## Enabling Word Document Post Processor

To enable Word Document Post Processor, follow these steps:

- 1 Open Windows Registry editor (select **Run**, enter regedit and click **OK**).
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default
- 3 Right-click the **Default** key and select **New | DWORD (32-bit) Value** from the shortcut menu.
- 4 Name the new entry **WordDocumentPostProcessing\_Timeout** and press **Enter**.

- 5 Double-click **WordDocumentPostProcessing\_Timeout**.
- 6 Select option **Decimal** in the **Base** group.
- 7 Enter the number of seconds for the timeout into the **Value data** box. A good default is 600 (10 minutes).
- 8 Click **OK**.

**NOTES**

- The value of **WordDocumentPostProcessing\_Timeout** enables and disables Word document post processing. To disable Word document post processing, set the value to 0.
- The value of **WordDocumentPostProcessing\_Timeout** defines the maximum time WordDocumentPostProcessor.exe can use for correcting the document. If the timeout is exceeded, Dimensions RM will continue without using the corrected document. Note that this can result in a Document which cannot be opened by Microsoft Word.

## Disabling Word Document Post Processor

**To disable Word Document Post Processor, follow these steps:**

- 1 Open Windows Registry editor (select **Run**, enter `regedit` and click **OK**).
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default
- 3 Select the value **WordDocumentPostProcessing\_Timeout**.
- 4 Press the **Delete** (or **Del**) key on your keyboard. This opens the **Confirm Value Delete** dialog.
- 5 Click **Yes** to delete the value.

## About Custom Word Document Post Processor

Custom Word Document Post Processor allows to modify the Word document before it is presented to the user. As it is a custom tool, it is not part of Dimensions RM. Open Text Professional Services can create a Custom Word Document Post Processor for you that matches all of your requirements.

## Enabling Custom Word Document Post Processor

**To enable Custom Word Document Post Processor, follow these steps:**

- 1 Open Windows Registry editor (select **Run**, enter `regedit` and click **OK**).
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default

- 3 Right-click the **Default** key and select **New | DWORD (32-bit) Value** from the shortcut menu.
- 4 Name the new entry **CustomWordDocumentPostProcessing\_Timeout** and press **Enter**.
- 5 Double-click **CustomWordDocumentPostProcessing\_Timeout**.
- 6 Select option **Decimal** in the **Base** group.
- 7 Enter the number of seconds for the timeout into the **Value data** box. A good default is 600 (10 minutes).
- 8 Click **OK**.



#### NOTES

- The value of **CustomWordDocumentPostProcessing\_Timeout** enables and disables custom Word document post processing. To disable custom Word document post processing, set the value to 0.
- The value of **CustomWordDocumentPostProcessing\_Timeout** defines the maximum time CustomWordDocumentPostProcessor.exe can use for correcting the document. If the timeout is exceeded, Dimensions RM will continue without using the modified document.

## Disabling Custom Word Document Post Processor

To disable Custom Word Document Post Processor, follow these steps:

- 1 Open Windows Registry editor (select **Run**, enter regedit and click **OK**).
- 2 Navigate to  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Micro Focus\Dimensions RM\Environment\Default
- 3 Select the value **CustomWordDocumentPostProcessing\_Timeout**.
- 4 Press the **Delete** (or **Del**) key on your keyboard. This opens the **Confirm Value Delete** dialog.
- 5 Click **Yes** to delete the value.

---

# Automatic Termination of MS Word

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---

## About Automatic Termination

When importing Word documents or requirements from Word documents, or exporting Dimensions RM documents or requirements to Word or PDF format, it may occur that Microsoft® Word may be unable to perform the desired function in the expected time. To avoid that the memory used during the process is never freed, ForceExit.exe will terminate the specific Microsoft® Word process after the configured time.

## Settings

The following sections describe the settings which are configured through the ForceExit.exe.config file, which resides in the <RM Install Dir>\bin folder. This config file is in XML format and must be edited with a text editor, e.g. Notepad.

Each setting is defined by the <setting> tag. Each setting is identified by its name attribute. A setting contains a <value> tag, which is used to configure the setting. The example below sets the polling interval to 5 minutes.

**Example:**

```
<setting name="PollingIntervalInMinutes" serializeAs="String">
 <value>5</value>
</setting>
```

| Setting                  | Description                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MaximumRunTimeInMinutes  | <p>Specifies the maximum time in minutes the target process may run.</p> <p><b>Possible values:</b> Any integer greater than 9.<br/><b>Default: 60</b></p>       |
| PollingIntervalInMinutes | <p>Specifies the time ForceExit checks if the target process has terminated</p> <p><b>Possible values:</b> Any integer greater than 0.<br/><b>Default: 5</b></p> |



# Configuration and Usage of ServiceHelper

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## About ServiceHelper

ServiceHelper is a command-line tool to support functionality with Dimensions RM, e.g. for managing Dimensions RM related services.

## Settings

The following table describes the settings which are configured through the ServiceHelper.exe.config file, which resides in the <RM Install Dir>\bin folder. This config file is in XML format and must be edited with a text editor, e.g. Notepad.

Each setting is defined by the <setting> tag and is identified by its name attribute. A setting contains a <value> tag, which is used to configure the setting. The example below disables the functionality to restart Tomcat.

### Example:

```
<setting name="MANAGE_COMMON_TOMCAT" serializeAs="String">
 <value>False</value>
</setting>
```

| Setting                              | Description                                                                                                                                            |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| MANAGE_COMMON_TOMCAT                 | Specifies ability to restart Tomcat.<br><br><b>Possible values:</b> True, False<br><b>Default: True</b>                                                |
| RESTART_TOMCAT_ATTEMPTS              | Specifies the maximum number of attempts to restart Tomcat.<br><br><b>Possible values:</b> 2 or larger integer value<br><b>Default: 5</b>              |
| RESTART_TOMCAT_ATTEMPTS_WAIT_SECONDS | Specifies the time in seconds to wait between Tomcat restart attempts.<br><br><b>Possible values:</b> 30 or larger integer value<br><b>Default: 30</b> |
| RESTART_TOMCAT_WAIT_SECONDS          | Specifies the time in seconds to allow Tomcat to restart.<br><br><b>Possible values:</b> 30 or larger integer value<br><b>Default: 120</b>             |

| Setting                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SECURITY_PROTOCOL                             | <p>Specifies the security protocol(s) to use when verifying that Tomcat has restarted successfully. These values must contain the same.</p> <p><b>Possible values:</b> Depends on installed .NET framework version:</p> <ul style="list-style-type: none"> <li>.NET 4.0: SSL3 TLS</li> <li>.NET 4.5: SSL3 TLS TLS11 TLS12</li> <li>.NET 4.8: SSL3 TLS TLS11 TLS12 TLS13</li> </ul> <p><b>Default: SSL3 TLS</b></p> |
| SERVICE_NAME_POOL_MANAGER                     | <p>Specifies the name of the RM Pool Manager service. Do not modify this value.</p> <p><b>Possible values:</b> RMPoolManager<br/><b>Default: RMPoolManager</b></p>                                                                                                                                                                                                                                                 |
| SERVICE_NAME_TOMCAT                           | <p>Specifies the name of the Tomcat service. Change this only if you do not use Open Text Common Tomcat.</p> <p><b>Possible values:</b> Any string with at least one character<br/><b>Default: opentextTomcat</b></p>                                                                                                                                                                                              |
| START_SERVICE_WAIT_SECONDS                    | <p>Specifies the time in seconds to allow a service to start.</p> <p><b>Possible values:</b> 5 or larger integer value<br/><b>Default: 40</b></p>                                                                                                                                                                                                                                                                  |
| START_STOP_SERVICE_ATTEMPTS                   | <p>Specifies the number of attempts to start or stop a service.</p> <p><b>Possible values:</b> 1 or larger integer value<br/><b>Default: 5</b></p>                                                                                                                                                                                                                                                                 |
| START_STOP_STOP_SERVICE_ATTEMPTS_WAIT_SECONDS | <p>Specifies the time in seconds to wait between start or stop attempts.</p> <p><b>Possible values:</b> 5 or larger integer value<br/><b>Default: 40</b></p>                                                                                                                                                                                                                                                       |
| STOP_SERVICE_WAIT_SECONDS                     | <p>Specifies the time in seconds to allow a service to stop.</p> <p><b>Possible values:</b> 5 or larger integer value<br/><b>Default: 25</b></p>                                                                                                                                                                                                                                                                   |

| Setting                               | Description                                                                                                                                                                         |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEMINFO_COMMON_TOOLS_SHOW_PATH     | <p>Specifies if the path to Dimensions RM Common Tools should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p> |
| SYSTEMINFO_COMMON_TOOLS_SHOW_VERSION  | <p>Specifies if the Dimensions RM Common Tools version should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p> |
| SYSTEMINFO_DATABASE_SHOW_NAME         | <p>Specifies if the database name (e.g. Oracle) should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p>        |
| SYSTEMINFO_DATABASE_SHOW_ODBC_VERSION | <p>Specifies if the version of the ODBC driver should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p>         |
| SYSTEMINFO_DATABASE_SHOW_VERSION      | <p>Specifies if the database version should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p>                   |
| SYSTEMINFO_MSOFFICE_SHOW_PATH         | <p>Specifies if the path to Microsoft Office should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p>           |
| SYSTEMINFO_MSOFFICE_SHOW_VERSION      | <p>Specifies if the version of the Microsoft Office should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p>    |
| SYSTEMINFO_OS_SHOW_DOTNET             | <p>Specifies if the installed .NET frameworks should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/><b>Default:</b> True</p>          |

| Setting                                  | Description                                                                                                                                                                                                                                                               |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEMINFO_OS_SHOW_DRIVES                | <p>Specifies the drives than can be included with the system information file. To include all drives, use *. Alternatively specify the drive letters separated by semicolon (e.g. C;D)</p> <p><b>Possible values:</b> * or valid drive letters<br/> <b>Default:</b> *</p> |
| SYSTEMINFO_OS_SHOW_ENVIRONMENT_VARIABLES | <p>Specifies if the environment variables should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/> <b>Default:</b> True</p>                                                                                                   |
| SYSTEMINFO_OS_SHOW_RAM                   | <p>Specifies if free RAM and total RAM should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/> <b>Default:</b> True</p>                                                                                                      |
| SYSTEMINFO_OS_SHOW_VERSION               | <p>Specifies if the version of the operating system should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/> <b>Default:</b> True</p>                                                                                         |
| SYSTEMINFO_RM_SHOW_PATH                  | <p>Specifies if the path to Dimensions RM should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/> <b>Default:</b> True</p>                                                                                                   |
| SYSTEMINFO_WEBSERVER_SHOW_NAME           | <p>Specifies if the name of the web server (usually Tomcat) should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/> <b>Default:</b> True</p>                                                                                 |
| SYSTEMINFO_WEBSERVER_SHOW_PATH           | <p>Specifies if the path to the web server (usually Open Text Common Tomcat) should be included with the system information file.</p> <p><b>Possible values:</b> True, False<br/> <b>Default:</b> True</p>                                                                |

| Setting                           | Description                                                                                                                                                                                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEMINFO_WEBSERVER_SHOW_VERSION | Specifies if the web server version should be included with the system information file.<br><br><b>Possible values:</b> True, False<br><b>Default:</b> True                                                                                       |
| VALIDATION_URL_FORMAT             | Specifies the format of the URL to verify that Tomcat has restarted successfully. Do not modify this value.<br><br><b>Possible values:</b> {0}:{1}/rtmBrowser/cgi-bin/rtmBrowser.exe<br><b>Default:</b> {0}:{1}/rtmBrowser/cgi-bin/rtmBrowser.exe |

## Usage

### Retrieving Dimensions RM Configuration

This function retrieves the configuration (Windows registry, and status of RM related services) and stores it as an XML file.

| Parameter  | Description                                                                 |
|------------|-----------------------------------------------------------------------------|
| Action     | GetRMConfiguration                                                          |
| OutputFile | Specify the path to the file to receive the RM configuration in XML format. |

**Example** (all on one line):

```
ServiceHelper.exe /Action GetRMConfiguration
/OutputFile C:\temp\RMConfig.xml
```

### Getting a List of RM Services

This function retrieves a list of RM related services including there status and stores it as an XML file. This list is also part of ["Retrieving Dimensions RM Configuration" on page 906](#).

| Parameter  | Description                                                             |
|------------|-------------------------------------------------------------------------|
| Action     | GetServiceList                                                          |
| OutputFile | Specify the path to the file to receive the service list in XML format. |

**Example** (all on one line):

```
ServiceHelper.exe /Action GetServiceList
/OutputFile C:\temp\services.xml
```

## Getting System Information

This function retrieves system information as allowed by configuration (see chapter ["Settings" on page 902](#)). Note that the database information is specified by command-line options.

| Parameter       | Description                                                                 |
|-----------------|-----------------------------------------------------------------------------|
| Action          | GetSystemInformation                                                        |
| OutputFile      | Specify the path to the file to receive the RM configuration in XML format. |
| Database        | Specify the database connection to appear in the XML file.                  |
| DatabaseName    | Specify the database name (e.g. Oracle) to appear in the XML file.          |
| DatabaseVersion | Specify the database version to appear in the XML file.                     |

**Example** (all on one line):

```
ServiceHelper.exe /Action GetSystemInformation
/OutputFile C:\temp\systeminformation.xml
/Database RM
/DatabaseName Oracle
/DatabaseVersion 19.0
```

## Importing Certificates into a System Keystore

This function imports certificates into the Windows keystore.

| Parameter       | Description                                                                                                                                                                                                                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action          | ImportSystemCertificate                                                                                                                                                                                                                                                                                                                                |
| SystemCertStore | Any value as specified in .NET StoreName enumeration (in System.Security.Cryptography.X509Certificates). Recommended values: <ul style="list-style-type: none"><li>▪ <b>Root:</b> Import into Trusted Root Certificate Authorities keystore</li><li>▪ <b>CertificateAuthority:</b> Import into Intermediate Certificate Authorities keystore</li></ul> |
| InputCert       | The full path to the certificate to import.                                                                                                                                                                                                                                                                                                            |

**Examples** (all on one line):

```
ServiceHelper.exe /Action ImportSystemCertificate
/SystemCerteStore Root
/InputCert C:\temp\rootCA.cer
```

```
ServiceHelper.exe /Action ImportSystemCertificate
/SystemCerteStore CertificateAuthority
/InputCert C:\temp\intermediateCA0.cer
```

## Restarting RM Pool Manager

This function restarts the RM Pool manager.

| Parameter  | Description                                                               |
|------------|---------------------------------------------------------------------------|
| Action     | RestartPoolManager                                                        |
| OutputFile | Specify the path to the file to receive the restart result as plain text. |

**Example** (all on one line):

```
ServiceHelper.exe /Action RestartPoolManager
/OutputFile C:\temp\restartresult.txt
```

## Restarting Tomcat

This function restarts the Tomcat service (usually Open Text Common Tomcat).

| Parameter     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action        | RestartTomcatSimple                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| OutputFile    | Specify the path to the file to receive the restart result as plain text.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ValidationUrl | <p>Specify the validation URL in this format:<br/><i>protocol://server:port/rtmBrowser</i></p> <p>Replace the format values like this:</p> <ul style="list-style-type: none"><li>■ <b>protocol:</b> must be http or https</li><li>■ <b>server:</b> The name of the machine. For HTTP, it can be localhost. For HTTPS the name must match the name of the certificate.</li><li>■ <b>port:</b> The port to use. If you do not need a port when accessing Dimensions RM in the web browser, use these default ports:<ul style="list-style-type: none"><li>• <b>For HTTP:</b> 80</li><li>• <b>For HTTPS:</b> 443</li></ul></li></ul> |

**Example** (all on one line):



```
ServiceHelper.exe /Action RestartTomcatSimple
/OutputFile C:\temp\restartresult.txt
/ValidationUrl http://localhost:8080/rtmBrowser
```

## Restarting a Service

This function restarts the specified service.

| Parameter  | Description                                                               |
|------------|---------------------------------------------------------------------------|
| Action     | RestartService                                                            |
| Service    | Specify the service name.                                                 |
| OutputFile | Specify the path to the file to receive the restart result as plain text. |

**Example** (all on one line):

```
ServiceHelper.exe /Action RestartService
/Service SERVICE_NAME
/OutputFile C:\temp\restartresult.txt
```

## Starting a Service

This function starts the specified service.

| Parameter  | Description                                                             |
|------------|-------------------------------------------------------------------------|
| Action     | StartService                                                            |
| Service    | Specify the service name.                                               |
| OutputFile | Specify the path to the file to receive the start result as plain text. |

**Example** (all on one line):

```
ServiceHelper.exe /Action StartService
/Service SERVICE_NAME
/OutputFile C:\temp\startresult.txt
```

## Stopping a Service

This function stops the specified service.

| Parameter | Description |
|-----------|-------------|
| Action    | StopService |

| Parameter  | Description                                                            |
|------------|------------------------------------------------------------------------|
| Service    | Specify the service name.                                              |
| OutputFile | Specify the path to the file to receive the stop result as plain text. |

**Example** (all on one line):

```
ServiceHelper.exe /Action StopService
/Service SERVICE_NAME
/OutputFile C:\temp\stopresult.txt
```

## Splitting a PFX Certificate

This function splits the PFX certificate chain into separate files. The files will reside in the same directory as the original certificate. file names are:

- **ca0.cer:** The certificate of the root certification authority.
- **ca#.cer:** Starting with ca1.cer; the certificates of the intermediate authorities
- **server.cer:** The certificate of the server to be certified.

| Parameter    | Description                                        |
|--------------|----------------------------------------------------|
| Action       | SplitCertificate                                   |
| InputCert    | Specify the path to the certificate in PFX format. |
| InputCertPwd | Specify the certificate password.                  |

**Example** (all on one line):

```
ServiceHelper.exe /Action SplitCertificate
/InputCert C:\Certificates\cert1.pfx
/InputCertPwd myPassword
```

# Azure Active Directory

|                                                   |     |
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---

## Registering Dimensions RM as an Azure Application

Dimensions RM can be configured to use Microsoft Azure as a login source. As such, passwords for users with user type **LDAP** or **SSO** are authenticated against Microsoft Azure.

**Important:**

The Azure AD authentication that was used in earlier releases with OAuth protocol must be reconfigured to use the new settings.

Before you begin, ensure that you have the login for the administrative account.

**To register Dimensions RM as an Azure application:**

- 1 Open the Azure portal in your web browser (<https://portal.azure.com>).
- 2 Log in with your administrative account, e.g. `admin@usernamedomain.onmicrosoft.com`.
- 3 Select **Azure Active Directory**.
- 4 Select **App registrations**.
- 5 Select **New registration**.
- 6 Enter a name into the **Name** box to identify your Dimensions RM application.
- 7 Select the **Accounts in the organizational directory only** option.
- 8 Specify the Redirect URI
  - a Ensure that Web is selected.
  - b Specify the URL for Dimensions RM, e.g. `https://myserver.mydomain:8443/rtmBrowser/`  
  
Replace *myserver*, *mydomain* and *8443* with server name, domain and port of your Dimensions RM installation.
- 9 Click **Register**. This creates the Azure app entry with the name you specified.
- 10 Select **Certificates & secrets**.

- 11 Click **New client secret**. This opens the **Add a client secret** dialog.
- 12 Select the desired expiry time.
- 13 Click **Add**.



**IMPORTANT!**

Copy the secret value and save it as a file.

- 14 Select **API permissions**.
- 15 Click **Add a permission**. This opens the **Request API permissions** dialog.
- 16 Select **Microsoft Graph**.
- 17 Select **Delegated permissions**.
- 18 Select **Directory.AccessAsuser.All**.
- 19 Select **User.Read**.
- 20 Click **Add permissions**.
- 21 Select **Authentication**.
- 22 Click **Add URI**.
- 23 Enter the following URI: `https://myserver.mydomain:8443/rtmBrowser/auth`  
Replace *myserver*, *mydomain* and *8443* with server name, domain and port of your Dimensions RM installation i.e. `https://ormtestit-rm05:8443/rtmBrowser/auth`  
  
Note that this URI is very similar to the one entered in step 8b. Here however, the trailing slash has been removed. It is important to specify this URI as well as users may have to specify the trailing slash otherwise.
- 24 Select option **ID tokens**.
- 25 Click **Save**.

## Retrieving Configuration Data from Azure AD

Before retrieving the configuration data from Azure, ensure that you registered Dimensions RM as Azure application. For details, see, "[Registering Dimensions RM as an Azure Application](#)" on page 911

It is simpler to gather the data before updating the configuration, we recommend opening a file with, for example, notepad to save the settings. You will need **Tenant**, **client\_uri**, **client\_id**, **Client\_secret\_key**.

### To retrieve the configuration data from Azure AD:

- 1 Open the Azure portal in your web browser (<https://portal.azure.com>).
- 2 Log in with your administrative account, e.g. `admin@usernamedomain.onmicrosoft.com`.

**3 To retrieve the Tenant, do the following:**

- a** Select **Azure Active Directory**.
- b** Select **Custom domain names**.
- c** From the list, take the **Name** value with this format:  
*username@domain.onmicrosoft.com* as the tenant.
- d Copy the tenant ID, by executing the following steps:**
  - A** Click the icon next to the tenant ID to copy the ID into the Windows Clipboard.
  - B** Open Notepad.
  - C** In Notepad, copy **Ctrl+V**.

**4 To retrieve the Client ID and Client ID URI, do the following:**

- a** Select **Azure Active Directory**.
- b** Select **App registrations**.
- c** Select the desired app.
- d** Select **Overview**.
- e** Copy the value from the **App ID URI**. This is the **Client ID URI**.
- f** Copy the value from the **Application (client) ID**. This is the **Client ID**.

**5 To retrieve the Issuer URL, do the following:**

- a** Copy **tenantID** and place into the Issuer URL. For example  
`https://login.microsoftonline.com/<tenantID>/v2.0`

**6 To retrieve the Trust Certificate, do the following:**

- a** Navigate to the following URL: [https://login.microsoftonline.com/{tenant\\_id}/discovery/keys](https://login.microsoftonline.com/{tenant_id}/discovery/keys).  
Replace **{tenant\_id}** with the ID you retrieved in [Step 3](#).
- b** Open Notepad, with a new file.
- c** Type **default:** (including the colon).
- d** From the Active Directory page, copy the certificate from the entry with key 0 to the clipboard by pressing **Ctrl+C**.
- e** Switch back to Notepad. Type a blank and paste the value from the clipboard by pressing **Ctrl+V**.  
**Example:**  
`default: MIIDB...`
- f** For any other certificate from the Active Directory page, execute the following steps:
  - A** In Notepad, create a new line.
  - B** From the Active Directory page, copy the key ID to the clipboard by pressing **Ctrl+C**.
  - C** Switch back to Notepad. Paste the value for **k id** from the clipboard by pressing **Ctrl+V**.

- D** From the Active Directory page, copy the certificate entry (x5c -> 0) to the clipboard by pressing **Ctrl+C**.
- E** Switch back to Notepad. Type colon and a blank and press **Ctrl+V**.  
**Example:**  
VGhpcyBpcyBhIFNhbXBsZSBvbmx5: MIIDB...
- g** Save the file with file extension **pem** (e.g. sts.pem).
- 7** The JWKS (JSON Web Key Set) URI (Optional)  
The JWKS URI can be included in order to automatically update public certificates in sts.pem when they are changed through a periodic update by Azure.  
The format is `https://login.microsoftonline.com/{tenantID}/discovery/v2.0/keys` with {tenantID} replaced with the value retrieved in [Step 3](#).
- 8** Copy *RM\_Install*\Common Tools `###\tomcat\#\webapps\rtmBrowser\WEB-INF\web.xml` to a backup - just to be safe.
- 9** Open *RM\_Install*\Common Tools `###\tomcat\#\webapps\rtmBrowser\WEB-INF\web.xml` with a text editor, e.g. Notepad.
- 10** Search for **Azure SSO Filter**
- 11** Modify as follows:
  - a** Uncomment the filter section.
  - b** Set filter-name, param-value to **true**
  - c** Set **Tenant** param-value to tenant, as saved above.
  - d** Set **client\_uri** param-value to **client\_uri**, as saved above.
  - e** Set **client\_id** param-value to **client\_id**, as saved above.
  - f** Set **client\_secret\_key** param-value to **client\_secret\_key**, as saved above.
  - g** Save web.xml
- 12** Configure login sources, checking **RM** and **Azure AD** (see "[Configuring E-Mail Notification](#)" on page 772). Enable Auto Create and add new user to default Instance and Group.
- 13** Click Settings for Azure AD (all must be populated):
  - a Authority:** e.g. `https://login.windows.net/`
  - b Tenant:** as saved
  - c Client ID URI:** as saved
  - d Client ID:** as saved
  - e Security Token Service (STS) Issuer URL:** Federation Server URL should look something like: `https://login.microsoftonline.com/00000000-0000-0000-0000-000000000000`
  - f Security Token Service (STS) Trust Certificate:** enter path to `rm\conf\sts.pem`
  - g JWKS (JSON Web Key Set) URI** if applied.

**Figure I-1. Configure Login Settings, Azure AD, Settings**

Start Services:

- a Dimensions RM Common Tomcat
- b Dimensions RM Pool Manager
- c Terminate all running RM License Tool processes.

## Azure SAML2 Authentication

To register Dimensions RM as an Azure application:

- 1 Open the Azure portal in your web browser (<https://portal.azure.com>).
- 2 Log in with your administrative account, e.g. `admin@usernamedomain.onmicrosoft.com`.



### IMPORTANT!

There is help available on the Azure portal, please refer to on-line instructions to configure a Web application.

- 3 Select **App registrations**.
- 4 To access the client ID, click **Expose an API**
- 5 Copy and save the **Application (client) ID**, it will be used in web.xml as **Audience** value.
- 6 Select **Overview-->Endpoints**
- 7 Copy and Save **Login** and **Logout Endpoints**.

- 8 On the Overview tab click **Redirect URL**
- 9 Click **Add a Platform**, select **Web**.
- 10 Click **Add URL and enter your URL**, for example:  
`https://ormtestit-rm05:8443/rtmBrowser/auth`
- 11 Select **ID tokens**.
- 12 **Save your platform and return to the RM Server**
- 13 Stop Services:
  - a Open Text Tomcat Service
  - b Open Text Pool Manager
- 14 Copy *RM\_Install*\Common Tools `###.##tomcat\##\webapps\rtmBrowser\WEB-INF\web.xml` to a backup - just to be safe.
- 15 Open *RM\_Install*\Common Tools `###.##tomcat\##\webapps\rtmBrowser\WEB-INF\web.xml` with a text editor, e.g. Notepad.
- 16 Search for **SAML2 SSO Filter**
- 17 Modify as follows:
  - a Uncomment the filter section.
  - b Set filter-name, param-value to **true**
  - c Set **Audience** param-value to the value copied from **Application (client) ID**.
  - d Set the **login** and **logout** param-value to the saved **Login** and **Logout Endpoints**
  - e Save web.xml

```
<!-- ***** Start of SAML2 SSO Filter Configuration ***** -->
<filter>
 <filter-name>Saml2SSOFilter</filter-name>
 <filter-class>de.qm.rm.sso.SamlSSOFilter</filter-class>
 <init-param>
 <param-name>enabled</param-name>
 <param-value>true</param-value>
 </init-param>
 <!-- Audience (EntityID) in SSO Idp -->
 <init-param>
 <param-name>audience</param-name>
 <param-value>api://6050a8b5-dafc-4d8b-a9a5-d538126a72d7</param-value>
 </init-param>
 <!-- SAML2 sign-on endpoint -->
 <init-param>
 <param-name>login</param-name>
 <param-value>https://login.microsoftonline.com/b1977ad7-766d-4f7e-93e9-5c7150724f28/saml2</param-value>
 <!--param-value>https://aergivzabalin-dev.onelogin.com/trust/saml2/http-post/sso/6730b197-1e00-42ac-8704-086</param-value>
 </init-param>
 <!-- SAML2 sign-out endpoint -->
 <init-param>
 <param-name>logout</param-name>
 <param-value>https://login.microsoftonline.com/b1977ad7-766d-4f7e-93e9-5c7150724f28/saml2</param-value>
 </init-param>
</filter>
```

- 18 Configure login sources, checking **RM** and **SAML SSO** (see ["Specifying Login Sources in RM Manage" on page 780](#)). Enable Auto Create and add new user to default Instance and Group.
- 19 Settings for SAML SSO:
  - a Audience - same as that used in web.xml.
  - b Issuer URL - from Federation Server metadata.



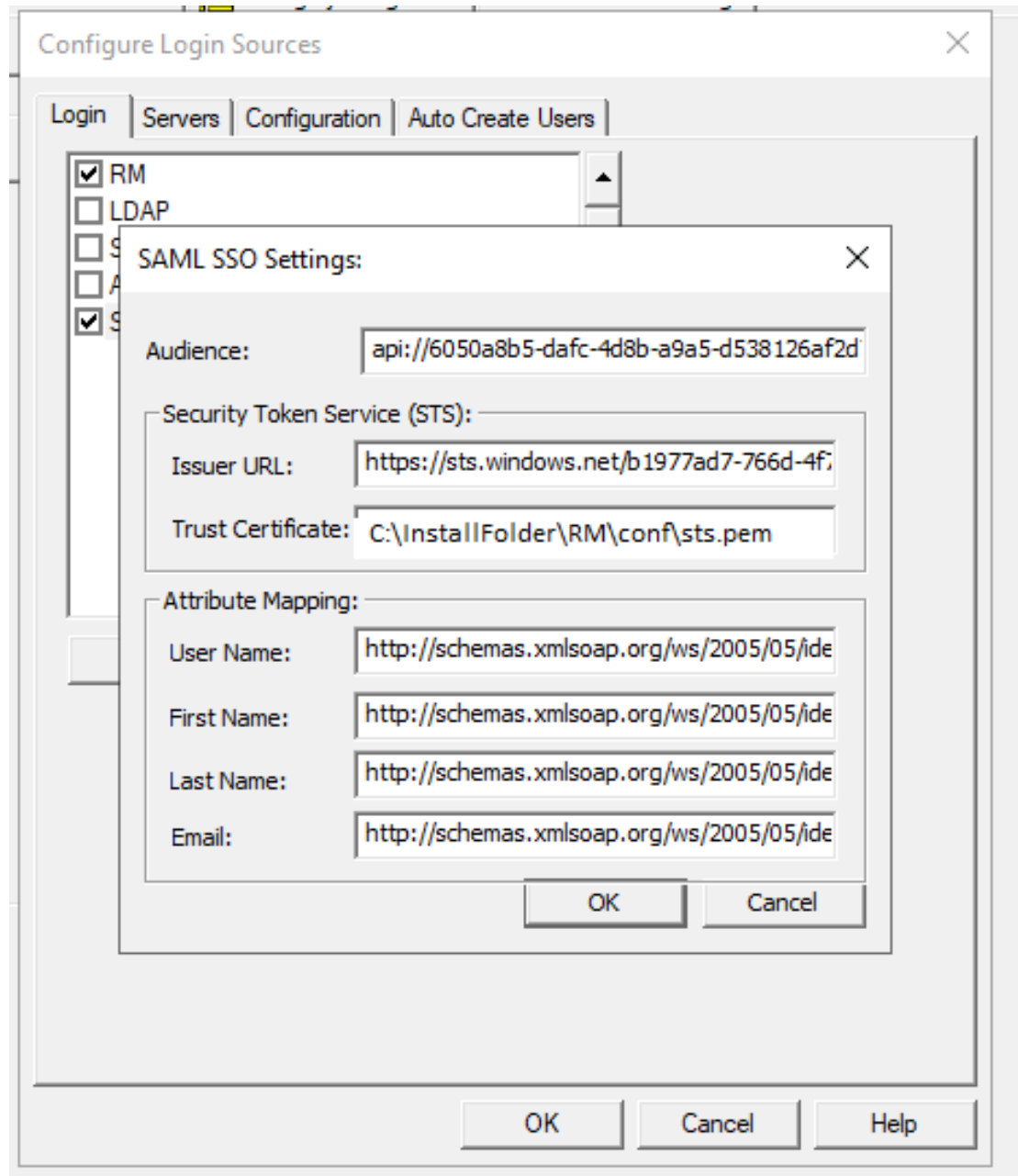
- c Trust certificate (copy value from Federation Server metadata to file sts.pem)

**20 To retrieve the Issuer URL, do the following:**

- a Select **Azure Active Directory**.
- b Select **App registrations**.
- c Select **Endpoints**. This opens the list of endpoints.
- d Copy the URL for the **Federation metadata document** into a new browser window. This loads an XML document.
- e From the EntityDescriptor tag, copy the value of the **entityID** attribute. This is the Issuer URL.

**21 To retrieve the Issuer URL, do the following:**

- a Select **Azure Active Directory**.
- b Select **App registrations**.
- c Select **Endpoints**. This opens the list of endpoints.
- d Copy the URL for the **Federation metadata document** into a new browser window. This loads an XML document.
- e From the EntityDescriptor tag, copy the value of the **entityID** attribute. This is the Issuer URL.

**22** Start Services:

- a** Open Text Tomcat Service
- b** Open Text Pool Manager
- c** Terminate all running rmLicenseAgent.exe instances in Task Manager

As with all Dimensions RM functionality, should you encounter issues, please contact Open Text support. If possible, provide screenshots.

---

# Configuring Windows SSO

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---

## About Windows SSO

Windows SSO allows users to log-in through the web browser using their domain account, without specifying a password.

Note that not all web browsers support this feature "out of the box." For client applications, e.g. RM Manage, or RM Import, Windows SSO is not supported.

## Configuring Windows SSO

Windows SSO has been reconfigured to use the Waffle Library; there is no longer a zip file included with the Dimensions RM release.

If, in a previous release, you have configured Dimensions RM to use Windows SSO, the following instructions will allow you to continue to use Windows SSO in this release.

If this is a new Dimensions RM Installation, or if you are preparing to use Windows SSO for the first time, please contact support: <http://supportline.microfocus.com>

**To re-configure Windows SSO, do the following:**

- 1 Stop **Dimensions RM Common Tomcat** Service.
- 2 Stop the **RM Pool Manager** service.
- 3 In Windows Explorer, navigate to **tomcat\10.1\conf**, e.g.  
e.g., "C:\Program Files\Open Text\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\conf".
- 4 Locate web.xml, open the file for editing.  
change the **gatekeeper.enabled** parameter to false:  

```
<init-param>
<param-name>gatekeeper.enabled</param-name>
<param-value>>false</param-value>
</init-param>
```
- 5 In Windows Explorer, navigate to **tomcat\10.1\webapps**  
e.g., "C:\Program Files\Open Text\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps".

Delete idp.war and idp folder

- 6 In Windows Explorer, navigate to **tomcat\10.1\webapps\rtmBrowser\WEB-INF**,  
e.g.  
"C:\Program Files\Open Text\Dimensions 25.2\Common Tools 2.5.0.0\tomcat\10.1\webapps\rtmBrowser\WEB-INF"
- 7 Locate web.xml, open the file for editing.  
enable the **WinSSOFilter** filter:  

```
<filter-name>WinSSOFilter</filter-name>
<filter-class>de.qp.rm.sso.WinSSOFilter</filter-class>
<init-param>
<param-name>enabled</param-name>
<param-value>true</param-value>
```

</init-param>

- 8** Go to **RM Manage** -> Login sources. (see Configuring Login Sources in the *Administrator's Guide*)  
Enable LDAP and turn off SBM SSO login source.
- 9** In **RM Manage** -> Go to the Configuration tab and set values for the LDAP server.
- 10** Enable Auto Create Users and assign default group and category (see Creating Users Automatically in the *Administrator's Guide*)
- 11** Kill all running RM License Tool processes in Task Manager.
- 12** Start the following services:
  - RM Pool Manager
  - Micro Focus Common Tomcat
- 13** Try logging in with RM Browser

If you have issues, please contact support: <http://supportline.microfocus.com>.  
Include details and, if possible, screen shots describing the issue.



# Glossary

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|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Accept</b>                 | <p><b>For implementations adopting a process using Change Proposals:</b> A function that <b>Accepts</b> a proposed change. The current status of the proposed requirement becomes "<b>Accepted</b>."</p> <p><b>For implementations using Accept for Comments</b> indicates that a submitted comment has been reviewed, incorporated and <b>Accepted</b> by the author of the comment.</p>                                                |
| <b>access rights</b>          | The full set of permissions granted a user based on the combination of Category, Group and User.                                                                                                                                                                                                                                                                                                                                         |
| <b>Actions</b>                | Functions or transactions associated with a category of resources that represent what can be done with that resource. Actions are listed throughout the interface, those accessible to a given user depends on context and permissions.                                                                                                                                                                                                  |
| <b>Administrator</b>          | Also referred to as Instance Administrator, users with this role may perform administrator functions within the boundary of the assigned instance. The instance administrator has access to RM Browser Administrator functions. See also <a href="#">System Administrator</a> .                                                                                                                                                          |
| <b>alias</b>                  | A set of keywords defined as variants or synonyms of a main keyword. For example, aliases of the keyword "calibrate" might be "calibrated," "calibrating," or even the wild card string "cal*". Unlike pseudonyms, which exist only while a particular Dimensions RM tool is active, aliases exist for the duration of the instance or until they are deleted.                                                                           |
| <b>alphanumeric attribute</b> | An attribute that represents one line of alphanumeric text, such as the title of an acceptance test. It can be up to 1000 characters in length.                                                                                                                                                                                                                                                                                          |
| <b>alphabetic sort</b>        | A simple alphabetical sort. Contrast with <a href="#">numeric sort</a> . Alphabetical sort ignores character case (e.g. abc is identical to ABC).                                                                                                                                                                                                                                                                                        |
| <b>attribute</b>              | <p>Descriptive properties about the requirement beyond its basic definition. See also <a href="#">class attribute</a>, <a href="#">evaluated attribute</a>, <a href="#">implicit attribute</a>, <a href="#">relationship attribute</a>, <a href="#">user-defined attribute</a>, <a href="#">custom attribute</a>, <a href="#">system attribute</a>..</p> <p>descriptive properties about the requirement beyond its basic definition</p> |
| <b>attribute constraint</b>   | A rule that permits a link to be created only if an attribute of the linked object (primary or secondary) obeys a specific constraint. See also <a href="#">primary object</a> .                                                                                                                                                                                                                                                         |
| <b>attribute type</b>         | The nature or data type of an attribute: e.g. alphanumeric string, free text field, or date.                                                                                                                                                                                                                                                                                                                                             |
| <b>audit trail</b>            | An historical trace of the various versions of requirements that lets you reconstruct requirement evolution. The Visual Network tool lets you view the audit trail graphically.                                                                                                                                                                                                                                                          |
| <b>auto link</b>              | A utility that lets you create or break links between objects of the primary and secondary class in the selected relationship.                                                                                                                                                                                                                                                                                                           |

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| <b>Automatic Refresh</b>             | A Document Chapter icon that indicates the chapter is based on a report, the structure is refreshed automatically when the document is opened or refreshed.                                                                                                                                                                                                                                                 |
| <b>Baseline</b>                      | A stable, unchangeable set of requirements. Baselining a collection or the requirement content in a document, ensures that the baselined set will never change.                                                                                                                                                                                                                                             |
| <b>baseline lock</b>                 | A lock on a specific version of an item that indicates that the version is part of a baseline and thus cannot be modified.                                                                                                                                                                                                                                                                                  |
| <b>branch<br/>(formerly provide)</b> | With the process of maintaining parallel projects for Products, branching allows requirements to be shared across projects or products, providing access to change while maintaining a common history.                                                                                                                                                                                                      |
| <b>Branch View</b>                   | Available from the Views menu, the <b>Branch View</b> allows users to branch multiple requirements, or to branch the contents of a Document or Collection. From the Branch View items within a project may be reviewed within the branch context.                                                                                                                                                           |
| <b>category</b>                      | Like folders on a file system, categories provide a method for organizing objects so you can create views of all objects. A requirement can belong to only one category.                                                                                                                                                                                                                                    |
| <b>cardinality rule</b>              | A rule that specifies the maximum number of links that can lead to and from primary or secondary objects. For example, a cardinality of 2:3 means that no more than two links can lead to a secondary object, and no more than three to the primary object. This is often used in processes that restrict, for example, the number of use cases linked to a given requirement, or the number of test cases. |
| <b>change request</b>                | A proposal to change one or more requirement attributes.                                                                                                                                                                                                                                                                                                                                                    |
| <b>child collection</b>              | Object hierarchies are created from the top down, from parent to child, while collection hierarchies are created in the opposite direction, by grouping child collections to form a parent collection, and so on. A child collection may be directly linked to an object. When a collection is created, it is a child collection by default.                                                                |
| <b>child document</b>                | <p>A child document inherits its layout from a <a href="#">parent document</a>. Changes to the parent document can be propagated immediately to any related child document.</p> <p>In a child document, any parts inherited from the parent document are read-only and cannot be modified.</p>                                                                                                              |
| <b>child object</b>                  | Whenever an object is edited and replaced, a new object is produced. The original object is called the parent object, and the new object is its child object. If this process is repeated, a child can itself be a parent of another child.                                                                                                                                                                 |
| <b>class</b>                         | A structure for holding related types of information (attributes). After classes are defined, requirements are entered into the class.                                                                                                                                                                                                                                                                      |
| <b>class attribute</b>               | A property of a class, as defined by the instance administrator, that provides additional process and release related detail.                                                                                                                                                                                                                                                                               |
| <b>class definition diagram</b>      | See <a href="#">Schema Definition diagram</a>                                                                                                                                                                                                                                                                                                                                                               |
| <b>Class Definition</b>              | A Dimensions RM tool initiated from RM Manage and used to create and initially populate an Instance. The definition of the schema is accessible from the Administration menu in the browser. See <a href="#">Schema Definition</a> .                                                                                                                                                                        |



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| <b>CM Lock</b>                | Configuration Management Lock. A security feature that makes objects read-only and stops them from being updated. You can lock requirements, collections, and documents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>collection</b>             | A way to group requirements of any class. Once a collection is created, it can be associated with a requirement by linking the requirement to the collection. Each requirement can be linked to many different collections, and each collection can be linked to many different requirements. Parent collections contain child collections. Child collections contain requirements. Parent collections are not directly linked to any requirements, only linked indirectly through their child collections. See also <a href="#">Baseline</a> .                                                                                                                                                                                                                                                       |
| <b>collection linkability</b> | An occurrence of the association defined by a relationship between collections.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>compliance check</b>       | A process in which Dimensions RM searches the database and produces a report specifying which objects do not contain links across a defined relationship.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>compliance report</b>      | A report that lists requirements that are or are not linked to objects in the other class in a relationship. A full compliance report lists all requirements in the primary and secondary class, whether or not they are linked to each other. A compliance-only report lists either all matching requirements in the primary class that have links to matching requirements in the secondary class, or all matching requirements in the secondary class that have links to matching requirements in the primary class. A non-compliance report lists either all matching requirements in the primary class that have no links to matching requirements in the secondary class, or all matching requirements in the secondary class that have no links to matching requirements in the primary class. |
| <b>Container</b>              | Container is the term applied to the various labeled sets of requirements: <a href="#">collection</a> , <a href="#">Baseline</a> , <a href="#">Document</a> , or <a href="#">Snapshot</a> . Containers are not restricted by requirement types and may span the entire instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>CSV import</b>             | A utility that lets you import data from a comma separated value file into the Dimensions RM instance database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>current</b>                | Current Status of a requirement that is the most recent or current version.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Current Status</b>         | A special implicit attribute that identifies the state of a requirement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Custom Attributes</b>      | Properties determined by the organization to be relevant to the class, e.g., priority, target release, estimated effort, design status, or reviewer.<br>The content of custom attributes is input and managed by users, as opposed to content controlled by the Dimensions RM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>cyclic relationship</b>    | A self referential relationships in which the link line begins and ends with the same class. Depending on process, this relationship is created in order to break a single requirement (primary) into related subrequirements (secondary), or to connect related requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>database</b>               | In the Dimensions RM environment, an instance of Oracle, Microsoft SQL Server, or PostgreSQL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>date attribute</b>         | An attribute used to store user process related timestamps in a format (including length, default, minimum, and maximum values) defined using presets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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| <b>Delete</b>                               | A command that changes the Current Status of a requirement to "deleted," but leaves the requirement in the instance.                                                                                                                                                                                                                                                                                      |
| <b>deleted</b>                              | Current Status of a requirement that was deleted. A deleted requirement remains in the instance. The prior version of the requirement, if any, receives a status of "current."                                                                                                                                                                                                                            |
| <b>derivation</b>                           | The analysis process in which an object is changed or translated into a form suitable for lower-level analysis and design.                                                                                                                                                                                                                                                                                |
| <b>derived object</b>                       | A lower-level object that is necessary for the implementation of a higher-level object. When an object changes form, it becomes a derived object. In general, a derived object is directed toward some sub-element and is more specific than the original object.                                                                                                                                         |
| <b>Dimensions RM</b>                        | A suite of multi-user, configurable tools that support the capture, management, traceability and documentation of systems engineering information.                                                                                                                                                                                                                                                        |
| <b>Dimensions RM third-party integrator</b> | Person responsible for using the API functions to integrate third-party tools with Dimensions RM.                                                                                                                                                                                                                                                                                                         |
| <b>Document</b>                             | <p>A container, within RM, structured in a hierarchical arrangement of chapters and requirements containing requirement objects together with free-form text. Documents can be imported or created within RM, managed through a defined workflow process, and exported as Word, PDF, Excel, and/or ReqIF.</p> <p>Documents, when open, are maintained using functionality available in Document View.</p> |
| <b>Document View</b>                        | <p>The RM Browser View and functionality from an Open Document.</p> <p>The Document is a container, the Document View provides the functionality available to maintain the container contents. There are two Document View Modes: Chapter (view a chapter at a time) and Entire Document</p>                                                                                                              |
| <b>ECP</b>                                  | Engineering Change Proposal. A class type. A set of related proposed requirements can be linked through an ECP object so that they are accessible for review as a group.                                                                                                                                                                                                                                  |
| <b>Notification</b>                         | Provides a facility for users to track (follow) objects, with notifications delivered via e-mail or browser alerts.                                                                                                                                                                                                                                                                                       |
| <b>evaluated attribute</b>                  | An attribute that takes its value from the external environment. Such an attribute can be specified as the default value for alphanumeric, numeric or date attributes. At run time, the specified script or command is executed and the resulting value is set for the attribute.                                                                                                                         |
| <b>expanding</b>                            | A process in which a single parent object is edited to produce one or more child objects.                                                                                                                                                                                                                                                                                                                 |
| <b>export template</b>                      | Custom Templates may be defined by the Instance Administrator to define the format, including headers and footers, of documents exported from Dimensions RM. These templates were previously referred to as Publish Templates.                                                                                                                                                                            |

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| <b>export utility</b>            | A utility that can be used to back up an instance or database. The package can be created as a collection of files in a single directory or as a single file, ready for transfer to the destination site.                                                                                                                                                                             |
| <b>file attachment attribute</b> | A user-defined attribute providing a method to associate one or more files with an object of any class.                                                                                                                                                                                                                                                                               |
| <b>flowdown</b>                  | A systematic process in which objects are decomposed into allocated and derived objects, and then assigned to low-level model components. This flowdown process generates a hierarchical structure of refined objects derived from the objects captured for the system.                                                                                                               |
| <b>focusing</b>                  | A process in which two or more parent objects are edited to produce a single child object.                                                                                                                                                                                                                                                                                            |
| <b>form</b>                      | A structure that displays requirement information for classes and relationships. A form is created for each class and relationship. You can create new forms by customizing the form that Dimensions RM generates, and can designate any form to be used as the default form.                                                                                                         |
| <b>form view</b>                 | A view that displays requirements one at a time. From the form view you can edit requirement attributes.                                                                                                                                                                                                                                                                              |
| <b>genealogical links</b>        | Links between parent objects and child objects, or between parent collections and child collections.                                                                                                                                                                                                                                                                                  |
| <b>generic links</b>             | Links that must span a relationship.                                                                                                                                                                                                                                                                                                                                                  |
| <b>grid view</b>                 | A view that lets you view multiple requirements in a table-like list. The column headings represent attributes of the requirements.                                                                                                                                                                                                                                                   |
| <b>group</b>                     | A collection of individual users grouped into a functional category. Access rights can be assigned to a group and all members of the group. If users have been assigned to an instance through a group, they inherit the group access rights, unless they have been explicitly granted or denied access.                                                                              |
| <b>group attribute</b>           | A group attribute is like a list attribute in that it provides a predefined list of values for user selection. But unlike a simple list attribute, a group attribute is composed of a series of sub attributes. The choices available to the user depend upon the selections they made in the higher level, or parent, attributes within the group attribute.                         |
| <b>immediate child</b>           | The object that was created when the original object was replaced, focused, or expanded. Immediate children are the next version of objects in the line of descent and may be current objects or objects with another status.                                                                                                                                                         |
| <b>immediate parent</b>          | The object that was used to create the currently selected object. Parent objects never have a status of "current."                                                                                                                                                                                                                                                                    |
| <b>immediate relationship</b>    | A relationship that refers to the immediate predecessor or successor of an object. Contrast with <a href="#">source relationship</a> .                                                                                                                                                                                                                                                |
| <b>implicit attribute</b>        | An attribute that is used to maintain the integrity of instance information. Implicit attributes include intrinsic information such as the persistent unique identifiers (PUIDs), object IDs, and modification times. You cannot modify implicit attributes. Implicit attributes are supplied for each class and relationship. Contrast with <a href="#">user-defined attribute</a> . |

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| <b>import utility</b>                        | A utility that can be used to restore an instance or database from backup.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>instance</b>                              | A Dimensions RM work area where information is created and maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Instance Administrator</b>                | Users with this role may perform all administrator functions within the boundary of the assigned instance.                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>lifecycle</b>                             | The phases of an instance from its initial requirements specification through its implementation.                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>link</b>                                  | An instance of a relationship. You can link two requirements together if a relationship between their corresponding classes is defined.                                                                                                                                                                                                                                                                                                                                                               |
| <b>linkable class</b>                        | A class with a relationship to a selected class.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>list attribute</b>                        | A user-defined attribute type that provides a list of values from which the Dimensions RM user can make a selection. For example, if you require the Dimensions RM user to choose one of a given set of values for the attribute <i>test_result</i> , specify the attribute as a list attribute, and define <i>pass</i> , <i>fail</i> , and <i>untested</i> as the set of allowed values. See also <a href="#">group attribute</a> , which functions like an interdependent group of list attributes. |
| <b>lowest level child</b>                    | A current object that is descended from the selected object. The objects contained in the lowest-level children list may skip generations of an object; that is, they need not be immediate children of the selected object.                                                                                                                                                                                                                                                                          |
| <b>mandatory attribute</b>                   | An attribute for which users must specify values. Contrast with <a href="#">optional attribute</a> .                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Merge View<br/>(formerly Synchronize)</b> | Available from the Views menu, the <b>Merge View</b> allows users to merge changes from multiple (or all) requirements branched in a project or product. From the Merge View items in both branch and target may be reviewed in context.                                                                                                                                                                                                                                                              |
| <b>NOT_PRIMARY_IN</b>                        | A relationship operator that is used to identify requirements that can be at the origin of a link, but do not.                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>NOT_SECONDARY_IN</b>                      | A relationship operator that is used to identify requirements that can be at the termination of a link, but do not.                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>numeric attribute</b>                     | A user-defined attribute type that holds numeric values, such as reference numbers. The numbers can include decimal points.                                                                                                                                                                                                                                                                                                                                                                           |
| <b>numeric sort</b>                          | A method of sorting that is used for alphanumeric attributes such as paragraph numbers in outlines. For example, with a numeric sort, the numbers (10, 20, 1, and 2) are sorted as (1, 2, 10, 20) instead of (1, 10, 2, 20). Contrast with <a href="#">alphabetic sort</a> .                                                                                                                                                                                                                          |
| <b>object</b>                                | Synonymous with <a href="#">requirement</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Object Editor</b>                         | A Dimensions RM dialog used to modify attributes and edit, focus, and expand class information.                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>OLE</b>                                   | Object Linking and Embedding. A technology for transferring and sharing information among applications.                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>optional attribute</b>                    | An attribute for which you can use the default values or leave blank. Contrast with <a href="#">mandatory attribute</a> .                                                                                                                                                                                                                                                                                                                                                                             |

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| <b>ORACLE_HOME</b>            | The logical pathname of the file system or network location of your Oracle installation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>parent collection</b>      | A collection that links child collections. Parent collections cannot be linked directly to an object.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>parent document</b>        | A document created with the intention of managing a common structure and content that is inherited by each child created based on the parent. See <a href="#">"About Documents" on page 212</a> .                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>parent object</b>          | An original object that produces a new object when the original object is edited. The original object is called the immediate parent object, and the new object is its immediate child object. If this process is repeated, a child object can itself be a parent object of another child object. In this way, the original parent object can spawn multiple levels of descendants, including both immediate child objects and lowest-level child objects. One or more parent objects can produce one or more child objects.                                                                              |
| <b>pending change request</b> | A change request that has not yet been accepted or rejected. A pending change request has a Current Status of "proposed."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Permissions</b>            | The rights to execute actions assigned by group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>polling</b>                | A feature of RM Browser that lets you solicit feedback about a requirement from selected users. Polls are typically used to decide whether a specific requirement should be accepted, or to reach consensus concerning the content of a requirement.                                                                                                                                                                                                                                                                                                                                                      |
| <b>primary class</b>          | The first class in a direct relationship between two classes. For example, in the relationship <i>Is_Testing_By</i> that connects class <i>Code_Module</i> and class <i>Acceptance_Tests</i> , <i>Code_Module</i> is the primary class, <i>Is_Testing_By</i> is the relationship, and <i>Acceptance_Tests</i> is the secondary class. The direction of the relationship arrow is always from the primary to the secondary class in the class definition diagram. This direction and positioning on the diagram defines the direction of the relationship. Contrast with <a href="#">secondary class</a> . |
| <b>PRIMARY_IN</b>             | A relationship operator that is used to identify requirements that are at the origin of a link.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>primary object</b>         | An instance of a primary class to which objects are linked.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>project</b>                | In software development, the project refers to the unit of work designed to add value to a new or existing component. In Dimensions RM, projects may be defined using categories or Product and Project classes established to manage multiple or parallel projects within a single product (see <a href="#">"Branching and Merging Requirements" on page 197</a> ).                                                                                                                                                                                                                                      |
| <b>proposed</b>               | Current Status of a requirement for which a change request has been made to either change the current requirement or create a new requirement.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>provide</b>                | See <a href="#">branch</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>pseudonym</b>              | Text pattern used to locate objects to be linked to a collection. For example, pseudonyms of the keyword "calibrate" might be "calibrated," "calibrating," or even the wildcarded string "cal*.". Unlike aliases, which exist for the duration of the instance or until they are deleted, pseudonyms exist only during the linking process. See also <a href="#">alias</a> .                                                                                                                                                                                                                              |

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| <b>publish template</b>       | The publish templates are used by many export functions and are now referred to as <a href="#">export template</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>PUID</b>                   | Persistent Unique Identifier. An intrinsic attribute, referred to in some dialogs and reports as the Requirement ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>query</b>                  | A script, expressed in terms of the instance schema, that you use to retrieve selected requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Quick Search</b>           | A feature allows users to quickly create a query to list the contents of the instance based on category and/or attributes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Reject</b>                 | <p>A command that rejects a proposed change. The Current Status of the proposed requirement becomes "rejected," and a copy of the requirement is created with the Current Status of "current."</p> <p>The Rejected state can also be applied to comments that have been rejected.</p>                                                                                                                                                                                                                                                                                                                                                   |
| <b>rejected</b>               | Current Status of a change request that has been rejected.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>relationship</b>           | An association between two requirement objects. The relationship (i.e., Link) is also an entity in its own right, in terms of having its own attributes and associated user access rights. See also <a href="#">link</a> .                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>relationship attribute</b> | A property of a relationship, such as its cardinality and its inheritance characteristics. Relationship attributes, defined by the instance administrator, can control how traceability is established across different relationships. Instance administrators can specify that links be created between two objects according to the value of one or more of the class attributes. For example, it can be specified that links can be created from a change request object to a requirement object only if the value of the change request object's attribute APPROVAL_STATUS is APPROVED. See also <a href="#">cardinality rule</a> . |
| <b>relationship rule</b>      | Circumstances under which links between objects will be permitted. See also <a href="#">cardinality rule</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>remove</b>                 | A command that physically removes a requirement from an instance. Only requirements with a status of "current" can be removed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>replaced</b>               | Current Status of a requirement that has been replaced by a newer version. See also <a href="#">Save</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>resource category</b>      | A grouping of resources into a class of items. For example, a unique document name falls into the category of Documents. Resource categories are important when assigning default permissions because defaults are assigned to entire class of resources rather than an individual resource. Resource categories are also important when assigning appropriate transaction for a class of resources. Certain transactions are appropriate only for certain categories of resources.                                                                                                                                                     |
| <b>requirement</b>            | An instance of a class. A description of a set of conditions applicable to a product or process; this description must be capable of being validated for success. A requirement object is satisfied by a product or process if a test reveals that the described conditions are met by the product or process. Synonymous with object.                                                                                                                                                                                                                                                                                                  |
| <b>RM Browser</b>             | A Dimensions RM tool that provides Web access to a core set of Dimensions RM functions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| <b>RM Import</b>                 | A Dimensions RM tool that lets you preview a Microsoft Word document as a draft document, change the description of chapters, reorganize the chapters, change the values of attributes, move attributes between chapters, and so on. When satisfied with the draft document, you can import the document into Dimensions RM as a document that can be viewed and modified in the Document View of RM Browser.                                                                                                                                                                                                                                                                                                                             |
| <b>RM Import Designer</b>        | A Dimensions RM tool that lets administrators design templates that users select when importing Word documents from RM Import. Templates define how to identify classes, attributes, chapters, requirements, and categories.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>RM Manage</b>                 | A Dimensions RM tool that lets instance administrators define users and groups, administer instance security, configure the instance database, organize data, and control user access and data routing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>RTM_HOME</b>                  | A logical name for the file system location of Dimensions RM programs and data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Save</b>                      | A command that creates a new version of a requirement with the changes you made. The Current Status of the original requirement is changed from "Current" to "Replaced", a parent-child link is created from the original requirement to the new requirement, and the current status of the new requirement is set to "Current".                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Schema Definition</b>         | <p>The Administrator function that provides the ability to define and/or modify various classes (i.e., requirement types) the attributes supported in those classes, and the relationships between them. The attributes defined within each requirement class, provide the input for reporting on the status of the requirements within each class.</p> <p>By specifying the instance structure in this way, a class definition both constrains and supports the development team in the way instances of classes, attributes and relationships can be created during the lifetime of the instance. All members of the development team use the Schema Definition to view each of the classes, their content and their relationships.</p> |
| <b>Schema Definition diagram</b> | A graphical representation of the information classes that exist within an instance, along with the relationships between the classes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>script</b>                    | A query against one or more classes. Scripts can be used to combine the selection criteria capabilities with complex link traversal, parameterization, basic calculations, and output formats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>script generator wizard</b>   | A Dimensions RM wizard that provides a graphical interface allowing the user to specify the contents of a given report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>secondary class</b>           | An object class that is the destination of the relationship arrow from a primary class in a class definition diagram. The relationship arrow points to the secondary class. Contrast with <i>primary class</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>SECONDARY_IN</b>              | A relationship operator that is used to identify requirements that are at the termination of a link.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Snapshot</b>                  | A frozen version of the document content (requirements and text) typically created prior to distributing a document for review. A <i>Baseline</i> may be created in conjunction with the snapshot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>source document</b>           | A document, typically provided by the customer, which is input to the system being developed. A source document can also be written in Dimensions RM by using an empty document and inserting objects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>source relationship</b>  | A relationship that refers to the original object in a chain of versions. Contrast with <a href="#">immediate relationship</a> .                                                                                                                                                                                                                                                                        |
| <b>suspect link</b>         | A link that becomes questionable after one of the requirements in the link changes. The change could render other requirements questionable, or "suspect."                                                                                                                                                                                                                                              |
| <b>System Administrator</b> | The role of administrator is assigned to those responsible for configuring and maintaining the RM environment. The system administrator can create, modify and delete instances, manage users and groups across all instances, and access all associated tools (e.g., <a href="#">RM Manage</a> ).                                                                                                      |
| <b>tablespace</b>           | A logical storage unit. Your instance data is physically stored in one or more data files associated with a tablespace. Initially, only one file is associated with the tablespace, but you can add more files as you need them. The size of a tablespace is determined by the size of the data file or combined data files that make up the tablespace.                                                |
| <b>template</b>             | A set of rules defined by an administrator in RM Import Designer that determines how a document will be imported into Dimensions RM using the RM Import tool.                                                                                                                                                                                                                                           |
| <b>text attribute</b>       | A user-defined attribute type that holds up to 64 KB of alphanumeric, ASCII text that can span more than one line. It is suitable for long descriptions, such as the description of an acceptance test.                                                                                                                                                                                                 |
| <b>transactions</b>         | Actions associated with a category of resources that represent what can be done with that resource. For example, a <b>Create</b> Action is associated with classes within an instance and indicates that the user has permission to create objects. For a list of Valid Transactions see <a href="#">"Valid Actions" on page 526</a>                                                                    |
| <b>traceability</b>         | The process of making explicit links between requirements and other entities. Traceability lets you trace the evolution of an instance.                                                                                                                                                                                                                                                                 |
| <b>Traceability View</b>    | Also referred to as Traceability Report. An RM Browser view that provides a way to select the relationships you want to trace, with requirements limited to selected baselines, documents, collections, or categories; browse through the requirements that are part of the relationships; and then print traceability reports that display the information in a visual format that is easy to analyze. |
| <b>type</b>                 | A definition of the basic properties of a set of instances of a class, relationship, or attribute.                                                                                                                                                                                                                                                                                                      |
| <b>Undelete</b>             | The undelete action changes a the Current Status of a requirement from "deleted" to "current."                                                                                                                                                                                                                                                                                                          |
| <b>Update</b>               | A command that overwrites the content of the requirement. No history of the change is maintained. This is only recommended if previous versions of a requirement must be deleted. All other attributes, including Current Status, remain intact.                                                                                                                                                        |
| <b>user</b>                 | An individual responsible for performing basic information management tasks, such as capturing objects, creating traceability links among requirements and other data, engineering and categorizing objects, and producing reports. An individual Dimensions RM user.                                                                                                                                   |
| <b>user attribute</b>       | A user-defined attribute type that provides a list of user names from which the Dimensions RM user can make a selection. A user attribute can contain all users, members of one or several groups or individual users.                                                                                                                                                                                  |



**User Menu**

The User Menu, formerly the Welcome Menu, provides access to Help, user specific settings, and notifications. To access the menu click into the initialed circle on the main menu bar.

**user-defined attribute**

An attribute created by the administrator for use in a specific class. See also *alphanumeric attribute*, *date attribute*, *file attachment attribute*, *group attribute*, *list attribute*, *numeric attribute*, *text attribute*, *user attribute*. Contrast with *implicit attribute*.



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= constraint 582

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