opentext*

Reporting Center Reporting Guide

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About this Book and the Library

The *Reporting Guide* provides conceptual information about the NetIQ Reporting Center (Reporting Center) product. This book defines terminology and includes implementation scenarios.

Intended Audience

This book provides information for individuals responsible for understanding reporting concepts and implementing an effective reporting environment. It also provides information about creating and distributing meaningful reports.

Additional Documentation

This guide is part of the Directory and Resource Administrator documentation set. For the most recent version of this guide and other DRA documentation resources, visit the DRA Documentation website.

Contact Information

We want to hear your comments and suggestions about this book and the other documentation included with this product. You can use the **comment on this topic** link at the bottom of each page of the online documentation, or send an email to Documentation-Feedback@microfocus.com.

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1 Introduction

Businesses today have an increasing need to produce easy-to-read, well-designed reports that reflect activity and events in their computing environments. NetIQ Reporting Center provides customers with the ability to create these reports that deliver the latest information about their businesses. For example, you can create reports that display the number of events in a managed domain during a specified time period. You can then use the same report to create multiple reports that display other time periods for events in that managed domain.

You can also use Reporting Center to create reports for security events, such as tracking the number of users that your business has provisioned or deprovisioned during a specific time period. You can easily customize almost every aspect of the look and feel of the charts and tables in your reports.

1.1 What is Reporting Center?

Reporting Center is a reporting framework that allows you to extract data from the databases of other DRA products and present the information as charts and tables in customizable reports. Reporting Center transforms the data into useful reports about the computing infrastructure that supports your business. You can use these reports to:

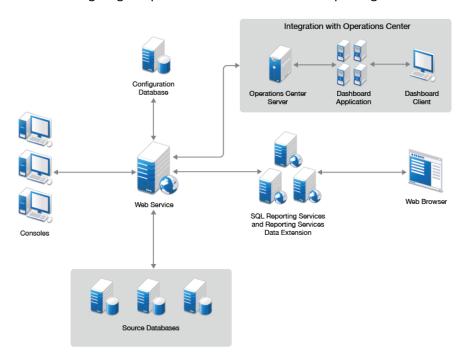
- Track the performance of your servers
- Uncover trends across your network
- Track security events
- Track provisioning activity for users and groups
- Make forecasts about resources and performance

Reporting Center uses Microsoft SQL Server and SQL Server Reporting Services (SSRS) to deliver up-to-the-minute enterprise analysis reports.

1.2 How Reporting Center Works

Reporting Center includes a number of components that work together to retrieve data from source databases and produce effective reports. You can customize and configure these reports in the Reporting Center Console and then deploy the reports to SSRS for distribution. You can distribute Reporting Center components across multiple computers or install them all-in-one.

The following diagram provides an overview of the Reporting Center architecture.



The Reporting Center Console connects to the Reporting Center Web Service, which allows you to perform queries on the source databases. You can install the Console on multiple computers. The Web Service retrieves data from the source databases and returns it to the Console, where you can configure and run reports. The Reporting Services Data Extension makes the same connection to the Web Service to publish, print, and provide Web access to reports using SSRS. You can deploy reports to multiple instances of SSRS and then view the reports in a Web browser. Reporting Center stores report configuration, security, and deployment information in the Reporting Center Configuration Database.

The Operations Center Sever, the Dashboard Application, and the Dashboard Client are the components of the Operations Center solution. The integration of the Operation Center and the Reporting Center allows you to view the Analysis Center reports in the Operations Center Dashboard The Operation Center Server connects to the Reporting Center Web Service, which collects data and displays the Analysis Center reports in the Dashboard client. The Dashboard is a Web application, which also functions as a client to the Operation Center Server. It allows users to view and manipulate data from the Operations Center Server. For more information on Operations Center, see the *Operation Center 5.7 Getting Started Guide*.

1.2.1 Console

The Console is the Reporting Center user interface, where you run reports and perform administrative tasks, such as defining Reporting Center accounts, groups, and permissions. From the Console, you can manage connections to databases on any SQL Server. You can also configure contexts for each report, such as setting a time frame, selecting data series, and specifying parent categories of data.

Use the Console to perform the following tasks:

- Customize the look and feel of a report
- Determine the amount of data displayed in a report
- Create dashboard reports that contain multiple related reports
- Configure deployment settings
- Configure subscriptions for SSRS

1.2.2 Configuration Database

The Configuration Database, NQRConfig, contains information that Reporting Center uses to run reports, including settings you configure during installation, as well as information that you define and view in the Reporting Center Console. The Configuration Database is created with case-insensitive settings. It includes the following information:

- Security information, such as the level of privileges assigned to each user, and the permissions you define for folders and reports
- SQL server and database names that Reporting Center uses to run reports
- Information about folders you set up to group your reports and data source connections
- Web Service specifications
- Customized schedule configurations and the status of scheduled reports

1.2.3 Web Service

The Web Service runs on a Microsoft Internet Information Services (IIS) Web server and is the centralized point of access to all your databases. It serves as the layer between the Reporting Center Console and the source databases, running the SQL queries that gather report data and then returning the data to the Console. In addition to authenticating source database connections, it also authenticates connections to the Reporting Services Data Extension, which in turn publishes your reports to SSRS.

1.2.4 Reporting Services Data Extension

Reporting Center allows you to deploy reports to SSRS that lets you to create and manage reports, and deliver them on a schedule. When you deploy a report from Reporting Center, the Reporting Services Data Extension communicates with SSRS through the Reporting Center Web Service to deliver the information. SSRS publishes the report, which you view in a Web browser.

7 Installing Reporting Center

This chapter lists the system requirements, account requirements, and supported applications for Reporting Center components. It also provides information about things to consider when you plan your installation or upgrade. Note that installing Reporting Center in a FIPS-compliant environment might require additional configuration measures. For more information, see Appendix B, "FIPS Solutions," on page 41.

2.1 System Requirements

The following table lists the hardware and software requirements for Reporting Center components:

Category	Requirement
Disk Space	575 MB free disk space
Memory	1 GB (2 GB recommended)
Screen Resolution	At least 1024x768 for the Console
Operating System	One of the following operating systems:
(for all components)	Microsoft Windows Server 2016
	Microsoft Windows Server 2019
	Microsoft Windows Server 2022
	Microsoft Windows 10
	Microsoft Windows 11
Configuration Database	Microsoft .NET Framework 4.8
	One of the following SQL Server versions:
	Microsoft SQL Server 2022
	Microsoft SQL Server 2019
	Microsoft SQL Server 2016
Reporting Center Console	Microsoft .NET Framework 4.8
Reporting Center Web Service	 Microsoft Internet Information Services (IIS) 10. For versions 7.0 or later, the following Role Services are required:
	Application Development: ASP.NET
	 Management Tools: IIS 6 Metabase Compatibility
	Security: Windows Authentication
	Microsoft .NET Framework 4.8
	Microsoft SQL Server 2016 ADOMD.NET

Category	Requirement
Reporting Services Data Extension	 Microsoft SQL Server Reporting Services 2016 or later Microsoft .NET Framework 4.8
Web Browser	 Microsoft Edge Google Chrome Mozilla Firefox

2.2 Planning Your Installation

This section includes the following information to help you plan your installation:

- Descriptions of the user accounts required before installation.
- Installation prerequisites for each Reporting Center component.
- Installation considerations for each Reporting Center component.

2.2.1 Account Requirements

The following table lists the accounts you need to create or identify before installing Reporting Center.

Account	Description	Requirement
Database Installer Account	Account you log in with to run the setup program that creates the Configuration Database.	 System Administrator privileges on the SQL server where you install the Configuration Database. Local administrative permissions on the computer where you run the setup program. NOTE: It is recommended to use windows authentication.
Web Service Installer Account	Account you log in with to run the setup program that creates the Web Service and also configures the Web Service account in the Configuration Database.	 System Administrator privileges on the SQL server where you install the Web Service. Local administrative permissions on the computer where you run the setup program.
Web Service User Account	Account that the Web Service uses to retrieve data from the reporting database.	None. If the account does not exist, the setup program creates it and assigns the following roles: • dbcreator and bulkadmin on the SQL server. • db_owner on the Configuration Database.

Account	Description	Requirement
Console Account	Account that connects to the Web Service to display and use the Reporting Center Console.	◆ Ability to log into the Web Service.

2.2.2 Installation Prerequisites

The following table lists the prerequisites you need to install each component of Reporting Center. For more information about specific accounts, see Section 2.2.1, "Account Requirements," on page 12.

Component	Installation Prerequisites	
Configuration Database	 Credentials for the Database Installer Account. The name of the SQL Server instance where you plan to install the Configuration Database. 	
Web Service	 Credentials for the Web Service Installer Account. The location of the Configuration Database. Credentials for the Web Service User Account. 	
Console	 The Web Service server URL in the following format: http://ServerName/NRCWebService 	
Reporting Services Data Extension	 The SSRS URL in the following format: http://ServerName/ReportServer 	

2.2.3 The Order of Installation

You can install the Reporting Center components individually or in any combination. If you install the components on separate computers, install the components in the following order:

- 1. Configuration Database
- 2. Web Service
- 3. Reporting Services Data Extension
- 4. Console

2.2.4 Configuration Database Considerations

Before you install the Configuration Database, consider the following:

- After installing all the components of Reporting Center, if you run the setup program again to modify your installation, there is no option to install the Configuration Database. This is a safeguard that prevents you from having multiple Configuration Databases installed in a single Reporting Center environment.
- After installing Reporting Center, set up regular SQL server backups for the Configuration Database.

- When you uninstall Reporting Center, the setup program removes all components except the Configuration Database.
- If you reinstall Reporting Center, the setup program allows you to overwrite the Configuration Database during set up.

2.2.5 Reporting Services Data Extension Considerations

Before you install the Reporting Services Data Extension, consider the following:

- You usually install the Reporting Services Data Extension on the computer hosting SSRS, your report server. However, if you are planning to use the Report Designer component of SSRS to customize reports, install the Reporting Services Data Extension on the computer hosting Report Designer.
- To deploy reports to SSRS and use the email subscription feature with Reporting Center, you
 need to perform two basic configuration tasks: set up at least one System User account with the
 Content Manager role and configure SSRS email settings. In addition, for subscriptions, the SQL
 Agent must be running. For more information about configuring SSRS, see Section 2.4,
 "Configuring SQL Server Reporting Services," on page 14.

2.3 Upgrading Reporting Center

Run NRCSetup.exe exclusively to upgrade NRC from 3.3.1 to 3.3.2.

2.4 Configuring SQL Server Reporting Services

To deploy reports to SSRS and set up email subscriptions, you must first configure SSRS to work with Reporting Center. The ability to deploy reports requires that each account that you use to log in to Reporting Center has corresponding account permissions in SSRS. Specifically, each Reporting Center account must, at a minimum, be designated in SSRS as System User with the Content Manager role.

The ability to set up email subscriptions requires that you configure the SSRS email settings in the Reporting Services Configuration Manager. In addition, for subscriptions, ensure that the SQL Server Agent is running.

For more information about deploying reports, see Section 4.3, "Deploying Reports," on page 26.

2.4.1 Configuring Report Deployment in SSRS

When you configure report deployment, you first specify an account as System User or System Administrator at the site level. You then assign that account the minimum role of Content Manager.

To enable report deployment in SSRS from Reporting Center:

- 1 In a Web browser, go to the SSRS URL, usually in the following location: http://SeverName/Reports
- 2 Click Site Settings > Security > New Role Assignment.
- **3** Enter the user or group account that deploys reports from the Reporting Center Console to SSRS.

- 4 Select a role for that account and click OK.
- 5 On the main Reports page, click Home > Properties > New Role Assignment.
- **6** Enter the user or group account you just assigned as a System User or System Administrator at the site level.
- 7 Select Content Manager and click OK.

2.4.2 Configuring Email in SSRS

If you want to set up a subscription in Reporting Center to deliver your deployed reports by email on a schedule, you must configure the email settings in SSRS. However, if you do not configure email settings in SSRS, then the Reporting Center only provides the option to set up a subscription for report delivery to a file share.

To configure email settings in SSRS:

- 1 Open the Reporting Services Configuration Manager and click E-mail Settings.
- 2 Specify the email address, SMTP delivery method, and SMTP server information and click **Apply**.
- 3 Click Exit.

3 Getting Started

After you install the Reporting Center components, open the Console and begin managing data source connections, setting security permissions, and running reports. This section describes how to start Reporting Center and work with data source connections.

3.1 Starting Reporting Center

When you log in to the Reporting Center Console, the Web Service uses IIS to validate the account credentials based on the Web Service configuration details provided during installation.

To start Reporting Center:

- 1 Log in to the computer where you installed the Reporting Center Console.
- 2 Click Start > All Programs > NetIQ > NetIQ Reporting Center > Reporting Center Console.
- 3 Provide the required information in the Logon dialog box and click Logon.

3.2 Navigating Reporting Center

Reporting Center is made up of three panes from which you can perform all the tasks related to data source connections, security settings, and reports.



3.2.1 Navigation Pane

The Navigation pane is the starting point for Reporting Center. Use the Navigation pane to initiate tasks such as choosing a data source connection and selecting a report. The information in the other panes change according to what you do in the Navigation pane.

Reporting Center Home is at the top of the Navigation Tree and allows you to start managing security, data source connections, and reports. When you click Reporting Center Home from the Navigation Pane or the toolbar, the Reporting Center Console displays links to start each of those tasks, along with information about your current security settings, data source connections, and reports.

3.2.2 Results Pane

The center of the Reporting Center interface contains the Results pane, which displays any information related to the folder, report, or data source connection you select in the Navigation pane. For example, this pane includes the contents of a report or the details of a data source connection. When you modify report properties in Reporting Center and run a report, the Results pane displays the report with those changes.

3.2.3 Tasks Pane

The Tasks pane contains common functions you perform in Reporting Center. The contents change according to what you select in the Navigation pane. For example, if you select an individual report in the Navigation pane, the Tasks pane displays a list of the report-related tasks along with the Report Context tab, which contains the context controls for the report.

3.3 Using the Reporting Center Console

After you install and open the Reporting Center Console, you can start setting up your reporting environment.

3.3.1 Managing Data Source Connections

Data source connections are the basis for the reports that you run with Reporting Center. The setup program automatically configures your initial data source connections according to the information you provide during installation. These data source connections point to specific database servers that provide the data for your reports. Data source connections use either Windows authentication or SQL authentication, depending on the security configuration of the source SQL Server and the choices you make when installing SQL Server. After installation, you can configure additional data source connections and modify connection properties in the Reporting Center Console.

Specifying a Default Data Source Connection

Before you run reports for the first time, Reporting Center Corporation recommends that you specify a default data source connection for each connection type. This allows you to run reports supplied with Reporting Center, which do have a specific data source connection configured.

To specify a default connection:

- 1 From the Navigation Tree, click Data Source Connections and right-click a connection.
- 2 Click Data Source Connection Properties > General and select Default Connection.
- 3 Click OK.

Adding a new Data Source Connection

You can add and configure a new data source connection.

To add a new Data Source Connection:

- 1 From the Navigation Tree, right-click Data Source Connection.
- 2 In the Add New Data Source Connection window, click General, and specify the following:
 - Data Source Connection Name
 - SQL Server Name
 - SQL Database Name
 - Authentication type- Windows or SQL Server
- 3 Click OK.

3.3.2 What's Next?

After you install Reporting Center and become familiar with the interface and data source connections, you can start using Reporting Center. The following list is an overview of the key tasks you can perform with Reporting Center. This is a suggested order, but the order in which you perform these tasks might vary, depending on the way your organization is structured.

- 1 Create reports from templates provided. For more information, see Section 4.1, "Understanding Reports," on page 21.
- **2** Deploy a report to SSRS and set up a subscription for it. For more information, see Section 4.3, "Deploying Reports," on page 26.
- **3** Create a hierarchy of Reporting Center users and groups. For more information, see Section 5.1, "Understanding Reporting Center Security," on page 31.
- **4** Set up permission sets for the users and groups and assign them to objects. For more information, see Section 5.2, "Assigning Security to Objects," on page 33.

4

Working with Reporting Center Reports

This chapter describes the Reporting Center reports and provides information about configuring, running, and deploying them.

4.1 Understanding Reports

Reports display the data extracted from Reporting Center databases in tables or graphically in charts. The Reporting Center Console allows you to configure almost every aspect of the presentation of your reports. For example: the color scheme, the type of chart, and the display of the X- and Y-axes, data points, data streams, legends, and titles.

In addition, you can generate new columns for your tables just using the Console, without depending on SQL queries defined into the reports. You can easily create multiple reports from the same report and add them to a dashboard report that contains reports with related information.

When you select a report, the Reporting Center Console displays the report in the Results pane, and the contexts of the report in the Tasks pane. To customize the appearance of the report and the data displayed, you can configure the report contexts and properties. After you modify a report, you must save it to retain the changes. Saving also automatically redeploys reports that you previously deployed to SSRS, so you typically do not need to manually redeploy reports after modifying them in the Console.

If you previously set up a subscription for a report and you modified the report in the Console, you must manually redeploy it once to reset the subscription. Also, if you modified the data displayed (for example, by changing the Data Query Limit context value), then you must also run the report to update it.

4.1.1 Setting Report Contexts

Report contexts are the data controls defined in the report, such as the data source connection, time frame, processes, roles, and query limit. The information in the Report Context tab changes according to the definitions specified in each report. You can modify most contexts to customize the data displayed in your report. For contexts with a tree, you can filter the nodes to display specific data, and you can perform a search on the context tree. The Reporting Center Console displays contexts on a tab in the Tasks pane.

Common Context Controls

The following are two common context controls:

Data Source Connection: Lists the sources of data for your report. If there is more than one connection available, you can determine which source Reporting Center uses to retrieve data for each report.

Time: Allows you to specify the date and time range for a report. You can customize the dates and times or choose from predefined ranges. You can also define the interval at which you aggregate data in your report. For example, if you have specified a time range of 12 months, you would want to aggregate data by month rather than day. You can limit the contents of a report to specific hours of the day and specific days of the week.

Using Report Contexts for Multiple Reports

Reporting Center allows you to configure a context and use that setting in other reports that contain the same context. The value of a Pinned context overrides the default value of the context in other reports. The value of a context that is **Not Pinned** is used only in the report displayed.

For example, you can pin the Date Range value of the Time context to Last Month if you want to execute a number of different reports, but only display data from the past month for each report. You can also execute reports that retrieve data for the same servers and metrics, but for a number of different time periods, by pinning other contexts.

When you open a report that does not contain the same context as the one that is pinned, Reporting Center automatically unpins the context for those reports, but keeps it pinned when you switch to a report that contains the context.

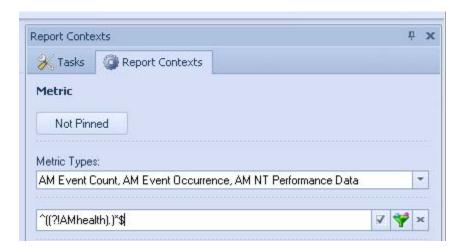
To use a context value in multiple reports:

- 1 In the Tasks pane, click the Report Context tab.
- **2** Click the name of the context at the bottom of the Context pane. You can view one context at a time.
- 3 Click Not Pinned at the top of the Context pane, which changes the button to Pinned, and pins that context. When you open another report containing the same context, the Reporting Center Console displays the pinned value.

4.1.2 Filtering the Report Contexts

- If you want to filter a metric that contains the string AMHealth, you need to specify the filter as AMHealth.
- If you want to filter a metric without the string AMHealth, you need to specify the filter as
 ^((?!AMHealth).)*\$ and select the Regular Expression check box.

Figure 4-1 Filtering metric using regular expressions



NOTE: To filter any metric using regular expressions, the **Regular Expression** check box must be selected.

For more information on search patterns using regular expressions, see http://www.regular-expressions.info/refquick.html.

4.1.3 Setting Report Properties

Report properties in Reporting Center either describe the report (such as name, description, date modified) or specify the appearance of the report (chart type, data series properties, 3-dimensional properties, and so on). You can modify most properties to customize your report.

Each time you modify a property, click **Apply** to view the changes. When you are done with modifying the report properties, save the report. Before you deploy the reports, experiment with the chart properties to ensure that you are presenting information in the best way for your intended audience. As you design your reports, keep in mind that certain properties in the Reporting Center Console are not supported by SSRS. For more information, see Section 4.3.1, "SSRS Limitations," on page 26.

If the report is already deployed to SSRS, saving the report in the Console redeploys the report to all SSRS locations. Therefore, if you want to experiment with the appearance of a report, but do not want the report to be redeployed each time, save a test version of the report that you can use to configure in different ways.

Example: Configuring Axes to Enhance Charts

Reporting Center makes it easy to configure chart properties to create interesting and relevant reports. Suppose you are preparing a report that contains data over a period of 20 months. In this report, you have a Column chart type, and the maximum value for the Y-axis is set to 100. You can use properties to manipulate the way the chart represents the data. For example, if you use the default settings (selected) for Automatic Minimum Axis Value and Automatic Maximum Axis Value (in

the Report Properties dialog box, go to Axes > Primary Y-Axis > Configure), Reporting Center calculates the minimum and maximum values for the Y-axis based on the minimum and maximum values of the data in the report.

Although the chart provides an accurate representation of the values, you can use the Y-Axis properties to provide a more meaningful presentation of this information. You can set the Y-axis to match the *possible* range of values by configuring Minimum Axis Value and Maximum Axis Value, which will provide you with a visual representation of where your data fits into the larger scheme.

To make the chart even more readable, you can limit the number of labels on the X-axis. For example, it is unnecessary to display a date on each data point for 20 months. You can change the frequency of the X-axis labels by changing the Label Interval Type to Auto or by changing it to Data Point, and specifying a number larger than 1 (in the Report Properties dialog box, go to Axes > X-Axis > Configure).

This is just one example of the ways that you can use properties to clarify the information in your charts and make them easier to understand.

4.1.4 Chart Limitations

When you configure properties for charts, consider the following information:

- If you use scale breaks in your charts, Reporting Center Corporation recommends using the default settings provided in the Reporting Center Console. Microsoft Chart Controls have a limitation in which scale breaks are not supported under any of the following conditions:
 - Pie, doughnut, or any stacked chart types are used.
 - Custom intervals for labels, tick marks or grid lines are enabled.
 - The minimum or maximum value for the axis is set.
 - Custom labels are used.
 - A logarithmic Y-axis is specified.
 - Axis views on the Y-axis, which include scrolling and zooming, are used.
 - 3-D charts are used.

If any of these conditions are used with scale breaks, the Reporting Center Console stops working. For more information about this issue, see Microsoft Website.

- If you choose any of the Line chart types, specifically Line; Fast Line; Step Line; and Spline, use the Border Line Width and Border Line Style properties to configure the appearance of the data series. This ensures that these charts are displayed correctly when deployed to SSRS. You access these settings in the Report Properties window on the Data Series tab.
 - Note that, for these chart types, you do *not* use the **Border Line Color** option to set the data series color. Instead, you use the **Color** property in the Configure Data Series dialog box, which you access from the Data Series tab by clicking **Configure** on the **Predefined Data Series** or **Custom Data Series** fields. Click the **Chart** tab and set a value for the **Color** field.
- If you specify a column for the X-axis that is in date-time format, you cannot group the data by that column, or sort the data in ascending or descending order. For all other data types, the grouping and sorting options are available.

4.1.5 Exporting Report Definitions

You can share reports by exporting report definitions. Reporting Center allows you to email or export charts and tables in a number of image and file formats. You export report definitions from the Report tab.

4.2 Using Dashboard Reports

Dashboard reports provide a way of grouping reports that contain related data in a single layout. Often, the purpose of a dashboard report is to give an overall picture of a specific part of your business. Accordingly, when you configure the dashboard, you should limit the amount of information displayed for each member report to make it more readable. To create a new dashboard report, save an existing dashboard report with a new name and then add or delete the member reports as required.

4.2.1 Dashboard Presentation

When you design the layout of a dashboard, consider the amount of information you want to present for each report on the page. To present only the most useful information for each report, Reporting Center provides the **Data Record Limit** setting, which allows you to determine the number of rows to display so that the dashboard is readable.

When you open a dashboard report, the Reporting Center Console displays the chart or table containing the limited number of data records. In the Reporting Center Console, you can use a scroll bar to view rows that did not fit into the page layout you chose, or you can click the title of the report to view all data records.

When you view a deployed report in a Web browser, SSRS does *not* provide a scroll bar, so it displays only the number of rows that fit onto the page size you chose in the Deploy Report wizard. Because additional rows are truncated by SSRS, use the **Data Record Limit** setting in the Console to ensure that the member reports of the dashboard are displayed correctly. In SSRS, if you want to view the complete report, first ensure that the member report is deployed, and then click the title of the member report.

Because member reports are embedded in dashboard reports, rather than linked, if you modify and redeploy a report that is also in a dashboard, you must redeploy the dashboard report as well. You can also deploy a dashboard without deploying individual member reports. In such cases, you can view the deployed dashboard, but cannot click the report title to view the complete report.

4.2.2 Shared Contexts

In a dashboard report, you can create shared dashboard contexts by using the existing contexts from member reports and overriding the default context values. Changing a report context to a shared dashboard context does not modify the value of context in the original report. Shared contexts just provide flexibility for the way you configure the dashboard. Instead of changing contexts in several

individual reports and then adding them to the dashboard, you just override the default context values of the existing member reports. Member reports can use a combination of shared dashboard contexts and default report contexts.

When you create a dashboard, the Reporting Center Console displays the contexts found in the member reports. It displays the report-defined contexts and the user-defined contexts. Often, more than one report contains the same context type, such as Time or Data Source Connection, with different values.

You can share these contexts to have all reports use them. For example, the same time period or retrieve data from the same database. In these cases, the Reporting Center Console displays the default values of the context from one of the reports and allows you to customize the context values for the dashboard. For example, if the member reports of your dashboard display data for a number of different time periods, and you want them all to show data for the last 14 days, share the Time context so that it overrides the default values for each report. Or, if you have two reports that retrieve data from two different databases, you can override contexts so that both reports retrieve data from the same database.

NOTE: You can configure Contexts only in the Reporting Center Console and not in SSRS.

4.3 Deploying Reports

You deploy reports to SSRS to make them accessible to anyone using a Web browser. Reporting Center allows you to configure SSRS from the Reporting Center Console, without opening SSRS. There are a number of deployment options, such as running the report on a schedule, delivering deployed reports to a file share or an email address, and automatically refreshing the report when data changes. You deploy a report from the Deploy Report wizard, which you access from the Report ribbon in the Reporting Center Console. You can also deploy multiple reports using the Deploy Bulk Reports option in the Quick Access Tool bar.

After you have deployed a report, Reporting Center automatically deploys changes when you save or run the report in the Console. It is not necessary to manually redeploy a report each time you modify it in the Console, unless you set up a subscription for the report. In that case, when you modify the report in the Console, you must redeploy the report once to reset the subscription. If you delete a deployed report from the Console, it is also deleted from SSRS.

NOTE: To deploy reports from Reporting Center, you must have permission to deploy a report from the Console and you must configure the correct permissions in SSRS. In addition, to take advantage of the email delivery option, you must configure email settings in SSRS. For more information, see Section 2.4, "Configuring SQL Server Reporting Services," on page 14.

4.3.1 SSRS Limitations

Before you deploy reports to SSRS, consider the following:

For reports deployed using Microsoft SQL Server 2008 Reporting Services, the deployed report
does not display the grid lines and tick marks configured in the Reporting Center Console. You
configure grid lines and tick marks in the Properties dialog boxes for the X-Axis, Primary Y-Axis,
and Secondary Y-Axis.

- SSRS does not support the Forecast report property. Consequently, reports configured in Reporting Center using Forecast does not display the forecasted data series.
- SSRS does not support the Data Point Marker Step report property. When you configure a data point step for markers on a data series, the value of the step is always 1 in SSRS, regardless of the actual value you set the Reporting Center Console before deploying the report. For more information, see Report Definition Language.
- In the Deploy Report wizard, if you configure the report to automatically refresh at regular intervals, and then you modify the report in the Console, the next time SSRS tries to refresh the report, it returns the following error:

An error occurred during client rendering. An error has occurred during report processing. The data source 'DataSourceName' cannot be found.

To refresh the report, click **F5** in the browser. SSRS resumes the auto-refresh at the intervals specified in the Deploy Report wizard.

4.3.2 Deploying a Report to SSRS

After you have saved a report, you can deploy it to SSRS.

To deploy a report to SSRS and view the deployed report:

- 1 From the Reports tab, click Deployment > Deploy Report.
- 2 Enter information in the Deploy Report wizard. For more information about the wizard, see the Help.
- 3 Click Finish.
- **4** To view the deployed report, go to a Web browser and type the following URL:

http://ServerName/Reports

5 Click the deployed report.

4.3.3 Deploying multiple Reports to SSRS

You can deploy multiple reports to SSRS:

- 1 From Quick Access Tool bar, click Deploy Bulk Reports.
- 2 In the Bulk Report Deployment, select the required reports.
- 3 Select the SQL Server Reporting Services URL. If you want to validate the URL that you have selected, click Validate. To add a new URL of a SQL Server Reporting Server, click AddNewLocation.
- 4 Click Deploy Selected.
- **5** After deployment is successful, close the Bulk Report Deployment.

4.4 Viewing Reports in Operations Center Dashboard

You can use the Operations Center Dashboard to view the Analysis Center reports that are created using the Reporting Center Console. For information on how to view the Analysis Center reports in the Operations Center Dashboard, see *Reporting Center Portlets* in the *Operation Center 5.7 Dashboard Guide*.

4.5 Creating Reports using Smart Report Builder

By using Smart Report Builder, you can preview the charts based on the report context headers and create your reports. Dummy data is used in the chart for previewing. You can also view the charts for the default AppManager report templates for creating reports.

To open Smart Report Builder, do one of the following:

- Click the Smart Report Builder icon in the Quick Access Tool bar.
- Click Global Tasks > Smart Report Builder.
- Click Cltrl + B.

4.5.1 Viewing a Chart based on the Report Context Headers

You can view a chart by selecting the report labels. The Report Label tab contains the following report context headers:

- Knowledge Script
- Group
- Metric
- Day
- Time

Drag and drop the required report context headers on the **X-axis** and the **Series** in the chart fields to view a chart. For example, if you want to view a chart in which the Knowledge Script is on the **X-axis** and the Group as the **Series**, you need to drag and drop the Knowledge Script on the **X-axis** and the Group on the **Series** in the chart field. You can also swap the report context headers in the chart fields and the chart changes accordingly.

4.5.2 Viewing a Chart for a Template

You can view the charts for the default AppManager report templates from the **Templates** tab. Click a report template in the Tree View to view the chart.

4.5.3 Creating and Saving a Report

After you have chosen the appropriate chart for your report, select the corresponding report contexts in the Report Context tab, and save your report.

IMPORTANT: The **Report Context** tab displays only the Knowledge Scripts, Groups, and Metrics for a report. For the remaining report contexts, default values are taken from the Reporting Console.

Smart Report Builder provides the three options to save your report. Click one of the following:

- Save new Report: Saves a report with the report context headers that you have selected.
- Save new Report per Machine: Saves a report for each machine that you have selected.
- Save new Report per Metric: Saves a report for each metric that you have selected.

The reports are saved in the Reports folder that can be viewed from the Navigation Pane of the Reporting Center.

Configuring Reporting Center Security

Reporting Center security defines what is visible to each user and determines what each user is allowed to do. Reporting Center saves all security settings in the Configuration Database.

5.1 Understanding Reporting Center Security

Configuring security in Reporting Center means restricting or allowing users access to objects on the Navigation Tree, including folders, reports, dashboards, templates, and data source connections. You configure security settings in the Manage Security window, which you can access from the Global Tasks ribbon, the main home page, or the Tasks pane.

When you configure security, you can define the following:

- Users: Individual user accounts. Administrators create an account for every user and determine user access to the Reporting Center Console. Reporting Center allows administrators to import user accounts from Windows Active Directory.
- **User Groups:** Collections of user accounts. Every user must be a member of at least one group, and groups can be members of other groups. Reporting Center allows administrators to create new Reporting Center groups or import Windows Active Directory groups.
- Permission Sets: Definitions specifying the level of access for groups to data source connections, folders, reports, and dashboards.

Configuring security includes the following types of tasks:

- Enabling and disabling users, granting Reporting Center administrative permissions to individual users, and adding Windows users to Reporting Center.
- Creating groups of Reporting Center users, granting administrative permissions to specific groups, and adding Windows users to Reporting Center groups.
- Creating and enabling permission sets that grant or deny access to specific objects or tasks in Reporting Center.

5.1.1 Understanding Users and User Groups

You configure your security model by defining users, adding users to user groups, and assigning a group and a permission set to each object in the Navigation pane. You can create users, user groups, and permission sets in any order.

The primary purpose of creating a user in Reporting Center is to assign it to a group. Administrators can grant users administrative privileges, but they cannot associate permission sets with users by themselves. After installation, only the installing account has access to Reporting Center as a member of the predefined Administrators group.

Reporting Center provides the following predefined user groups that you cannot delete.

- Reporting Center Administrators: Grants full, administrative permissions in Reporting Center.
 By default, Reporting Center adds the installing account to this group. In Reporting Center, to
 have administrative permissions, a user account must be a member of Reporting Center
 Administrators or a member of a group that is a member of it. Having administrative privileges
 outside of Reporting Center is not sufficient.
- Reporting Center Users: Allows administrators to grant limited, non-administrative permissions in Reporting Center. By default, this group contains no members and has no permissions defined.

When you design your security model, take advantage of the flexibility that Reporting Center provides by importing groups and by adding groups as members of other groups. For example, you can import a complete Windows Active Directory group and grant the group access to a specific report. You can also configure that imported Active Directory group to be a member of another group, and at the top level grant the group access to relevant reports.

5.1.2 Understanding Permission Sets

Defining permission sets allows you to enforce more granular security for each object in Reporting Center. You can allow or restrict access to every task users can do. For example, one group can have permission to create and delete reports, and another group can have permission to only view reports. You decide what users can do depending on what users need to effectively do their jobs, and how you want to configure your environment.

When you configure permission sets, choose from the following three states.

<i>></i> ✓	Granted: Users have access to the object with this permission or are allowed to do the specified task (such as modifying reports or creating folders).
<i>P</i>	Denied: Users cannot access the object with this permission or are not allowed to do the specified task. When a user logs in, Reporting Center does not display the restricted objects.
<i>P</i> □	Not Granted: The specified task does not have any defined permissions. Users can view these objects (as long as the View a Node permission is granted), but cannot perform the tasks.

Reporting Center provides a number of predefined permission sets that you can either customize to create new permission sets, or use as provided. These permission sets allow various levels of access to data source connections, folders, reports, and dashboards in the Navigation Tree. The following table lists the predefined permission sets, along with the access they allow or restrict. If you customize one of these permission sets, you can allow or restrict access to each individual task, such as creating folders, exporting reports, and so on.

If you modify the predefined permission sets, Reporting Center Corporation recommends that you do not change their names. If you upgrade Reporting Center in the future, Reporting Center reinstalls them with the original names.

NOTE: To ensure that a node is visible, you must include the View a Node permission in the permission set. Otherwise, it is possible for a group to have permissions to manipulate a node that is not displayed. Permission to run a report is included in the View a Node permission.

Category	Permission
Administration	Assign security rules to a Node
Folder	Create a Folder
	Delete a Folder
	Move a Folder
	Rename a Folder
Node	View a Node
Report	Create a Report
	Delete a Report
	Deploy a Report
	Export a Report
	Move a Report
	Print a Report
	Rename a Report
	Save a copy of Report
	Save a Report

5.2 Assigning Security to Objects

After you have set up users, user groups, and permission sets, the next step is to apply security to the objects on the Navigation Tree. When you configure security for these objects, you choose a user group and a permission set and associate them with the specified object. These security settings determine what users are allowed to do in Reporting Center. You can apply security to every object except Reporting Center Home, which is the root object on the Navigation Tree.

For objects in a hierarchy, Reporting Center uses the most restrictive permissions and applies them to the subfolders and objects. If you have not configured security for a particular object, that object inherits the permissions of its immediate parent. When you log in to Reporting Center, it displays only the objects that the group has permission to view.

For example: Consider a scenario in which a group has permission to view the default Reports folder and the folder for Application A, but does not have permission to view the folder for Application B. In this case, the group has access to the reports for Application A, but does not have access to the reports for Application B. The Reporting Center Console does not display the Application B folder when users from that group log in.

5.2.1 Tips for Planning Your Security Model

As you plan your security model, consider the following recommendations:

- Arrange your groups hierarchically. Take advantage of the ability to add groups as members of other groups. In this way, you can arrange the groups correctly and then assign permission at the top level.
 - For example, suppose you have a shared environment running Aegis, Directory and Resource Administrator (DRA), and Analysis Center. For each application, you can create **bucket** groups containing other groups that can only access the reports and dashboards for those applications. Rather than assign permissions for each member group, you would assign permissions at the top-most level.
- Use the Reporting Center user groups you create or the Windows Active Directory groups you
 import to manage the different permission levels of different folders, reports, and data source
 connections. For example, an Aegis group would only have access to the Aegis nodes and
 connections on the Navigation Tree, a DRA group would only have access to DRA reports and
 connections, and so on.
- Organize your security model before you implement it by creating user accounts, user groups, and permission sets, and keeping them disabled until you are ready to apply security.
- In the ongoing administration of Reporting Center Security, modify your security model to adapt to the needs of your company so that users only have access to the reports and data source connections relevant to them.
- For a user account to view objects on the Navigation Tree when the user logs on to Reporting Center, the account must be a member of a group associated with a permission sets. Otherwise, the Navigation Tree is blank.

5.3 Applying Security

You can add multiple users to a user group and multiple groups to other groups. You can also add the same group multiple times with different permissions. In this case, if there are overlapping permissions (for example, two different permission sets that both assign permissions to reports), the most restrictive permission set takes precedence.

To apply security to a node on the Navigation Tree:

- 1 (Conditional) If you are applying security to a folder or data source connection, right-click the node and click Folder Properties > Permissions or Data Source Connection Properties > Permissions.
- 2 (Conditional) If you are applying security to a report or dashboard, right-click the node and click Report Permissions or Dashboard Permissions.
- 3 Click Add.
- 4 In the dialog box, choose a user group and then choose a permission set. Reporting Center enforces this permission set for the group you select. You can also modify or create new permission sets.
- 5 Click **OK** and then click **OK** in the main window.



Troubleshooting

This appendix includes suggestions for resolving issues you might encounter when using Reporting Center

A.1 General Web Service and Logon Issues

If you encounter errors when you log in to the Reporting Center Console or when you try to connect to the Reporting Center Web Service, consider the following suggestions:

- Ensure that the SQL account credentials has not changed.
- If the Web Service is installed on IIS 7.0 or later, ensure that ASP.NET Impersonation Authentication is disabled in the NRCWebService Virtual Directory.
- Configure IIS to display detailed error messages to diagnose the problem.

Review the following sections for information on how to perform these tasks.

- Section A.1.1, "Resetting the SQL Account," on page 35
- Section A.1.2, "Verifying the Authentication Settings," on page 36
- Section A.1.3, "Configuring and Generating Error Messages," on page 36

A.1.1 Resetting the SQL Account

If you installed the Reporting Center Web Service using a SQL account and subsequently changed the password on that account, the following error message is displayed:

Login Error: Login failed for user <SQL User Account> using the SQL account.

To resolve this issue:

- 1 Uninstall the Reporting Center Web Service and reinstall it using the new SQL password. This does not affect your reports.
- 2 In the Reporting Center Console, re-enter the SQL password in the Data Source Connection Properties window.

A.1.2 Verifying the Authentication Settings

For IIS 7.0 or later, in the NRCWebService Virtual Directory, Windows Authentication is enabled and ASP.NET Impersonation Authentication is disabled by default. If the Virtual Directory is no longer configured this way, you cannot log in to the Reporting Center Web Service.

To configure authentication settings in IIS 7.0 or later:

- 1 Start IIS Manager on the computer where you installed the Web Service, and expand the Web Sites folder.
- 2 Expand the name of Web Site where you installed the Web Service, and click NRCWebService.
- 3 In the IIS section of the center pane, double-click Authentication.
- 4 (Conditional) If ASP.NET Impersonation is enabled, select it and click Actions > Disable.
- 5 (Conditional) If Windows Authentication is disabled, select it and click Actions > Enable.
- 6 Close IIS Manager.

A.1.3 Configuring and Generating Error Messages

If IIS Manager is displaying generic error messages, you can configure Internet Explorer to display more technical error messages.

To configure error messages in Internet Explorer:

- 1 Click Tools > Internet Options.
- 2 Click the Advanced tab and deselect the Show Friendly HTTP Error Messages option in the Browsing list.
- 3 In IIS Manager, generate the Default Web Site error or Web Service error again to obtain more detailed information and contact Technical Support (http://www.netiq.com/Support/contactinfo.asp).

A.2 Reporting Center Web Service Unavailable

If you log in to the Reporting Center Console and the Reporting Center Web Service is unavailable, the following message is displayed:

Web Service 'WebServiceURL' is currently unavailable.

Review the following sections for information about resolving this error:

- Section A.2.1, "Verifying That the Application Pool is Running," on page 37
- Section A.2.2, "Resetting an Expired Windows Account," on page 37

A.2.1 Verifying That the Application Pool is Running

If you encounter this error message when you log in to the Console, ensure that the Reporting Center Application Pool (NRCAppPool) is installed and running. If it is not, you should restart NRCAppPool in IIS Manager and log in to the Reporting Center Console again.

To manually start the NRCAppPool application:

- 1 Start IIS Manager on the server hosting the Reporting Center Web Service, and expand **Application Pools**.
- 2 Right-click NRCAppPool and select Start.
- 3 Close IIS Manager.

A.2.2 Resetting an Expired Windows Account

You must ensure that NRCAppPool Identity user account, which is the Windows account used to install the Reporting Center Web Service user, is not expired. If the user account has expired, the Reporting Center Console displays the Service Unavailable error when you log in to the console. You must reactivate the account and reset the password.

To manually reset the NRCAppPool identity user password:

- 1 Start IIS Manager on the server hosting the Reporting Center Web Service, and expand **Application Pools**.
- 2 (Conditional) If you are running IIS 6.0:
 - 2a Right-click NRCAppPool and select Properties. Click the Identity tab.
 - **2b** Click **Configurable**, enter the Identity user credentials, and click **OK**.
 - 2c Right-click NRCAppPool and select Start.
- **3** (Conditional) If you are running IIS 7.0 or later:
 - 3a Select NRCAppPool.
 - **3b** From the Action pane to the right of the Application Pools list, click Advanced Settings.
 - 3c In the Process Model section, select Identity and click Custom account.
 - **3d** Click **Set**, and enter the Identity user credentials in the Set Credentials window.
 - **3e** Click **OK** to close the Set Credentials window, the Application Pool Identity window, and the Advanced Settings window.
 - **3f** Right-click NRCAppPool and select Start.

A.3 No Data Found In a Report

If you execute a report and the Reporting Center Console displays a No Data message, the report might not contain data for the contexts specified for the report. Check whether Reporting Center can retrieve data for a broader range of contexts, such as a greater time or date range.

To verify if the data is beyond the current context configuration:

- 1 In the Context Pane of the Reporting Center Console, change the relevant contexts to include a broader date range or more information. For example, selecting more items in a navigation tree.
- 2 Click Run Report.

If the report contains data, the Reporting Center Console displays the information according to the contexts you reconfigured. This indicates that Reporting Center had originally executed the report correctly, but had no data to retrieve for the specified contexts.

A.4 Changing Timeout Values

You might encounter report timeout issue because of connection errors. To avoid the report timeout issue, review the following sections:

- Section A.4.1, "Executing Reports," on page 38
- Section A.4.2, "Loading or Importing Reports," on page 39

A.4.1 Executing Reports

If you run reports that return large data sets, the time required for the report execution might exceed the connection timeout setting configured for the data source. Consequently, the report execution times out. To avoid this timeout issue, increase the value of the Timeout attribute for each Connection element before you execute the report. This Timeout attribute is listed in the XML column of the NQRConfig database DataSource table. By default, the TimeOut value is 3600 seconds. A value of 0 indicates no timeout limit and the report query executes indefinitely.

Sample of the XML column content:

```
<ExtDataSource Name="datasource name" DataSourceType="datasource_type"
Description="datasource_desc"
DefaultConnection="no_of_default_connections">
        <Connection Name="name" Server="ServerName1" Database="database_name"
TimeOut="3600" />
        </ExtDataSource>
```

To change the value of the Timeout attribute that is listed in the XML column of the NQRConfig database DataSource table, do the following:

1 Open the NRC.ExtDataSource.xml file that is available in the \NetIQ\Reporting Center\Config\ folder.

NOTE: The NRC.ExtDataSource.xml file opens as Read-only mode. You must change to Write mode to edit the file.

- 2 Modify the Timeout attribute value of the <Connection> element based on your report execution time
- **3** Check in the NRC.ExtDataSource.xml file by using the following command at the command prompt:

```
XMLCheckin.exe<SQL
Server named instance> "Path for the xml file"
For example: XMLCheckin.exe <NQRConfig Database Server>
"E:\NRC\NRC.ExtDatasource.xml"
```

NOTE: The XMLCheckin.exe file is available in the \NetIQ\ReportingCenter\Utilities folder.

You can also increase the value for the executionTimeout attribute of the httpRuntime element, which governs the length of time a request is allowed to run before ASP.NET automatically shuts it down. Add the following httpRuntime element within the system.web section of the Web.config file, which is available in the NetIQReporting CenterWebService folder. Set the executionTimout value to match the TimeOut values you set for the Connection element.

```
<httpRuntime executionTimeout="3600"
maxRequestLength="4096"
useFullyQualifiedRedirectUrl="false"
minFreeThreads="8"
minLocalRequestFreeThreads="4"
appRequestQueueLimit="100" />
```

A.4.2 Loading or Importing Reports

When loading a report or importing a large number of reports, you might encounter a timeout issue. To avoid this timeout issue, increase the value for the TimeOut attribute in the Connection element of the Web.config file on the Web Service website. By default, the TimeOut value is 3600 seconds.

You can also increase the value for the executionTimeout attribute of the httpRuntime element, which governs the length of time a request is allowed to run before ASP.NET automatically shuts it down. Add the following httpRuntime element within the section of the Web.config file, which is available in the \netlQ\Reporting Center\WebService folder. Set the executionTimout value to match the TimeOut values you set for the Connection element.

```
<httpRuntime executionTimeout="3600"
maxRequestLength="4096"
useFullyQualifiedRedirectUrl="false"
minFreeThreads="8"
minLocalRequestFreeThreads="4"
appRequestQueueLimit="100" />
```

A.5 Maximum Request Length Exceeded Error

While deploying a report to SSRS, you might see the following error:

System.Web.HttpException: Maximum request length exceeded.

To avoid the error you need to increase the maximum request length as follows:

1 Go to the //Microsoft SQL Server\MSRS<version>.MSSQLSERVER\Reporting Services\ReportServer\ folder.

For example: //Microsoft SQL Server\MSRS12.MSSQLSERVER\Reporting
Services\ReportServer\

- 2 Open the web.config file.
- **3** Locate the <maxRequestLength> parameter in the file and increase the value to 8192.
- **4** (Optional) If the <maxRequestLength> parameter is not available, add the following statement:

```
<httpRuntime executionTimeout="9000" maxRequestLength="8192" />
```

- **5** Save the file and restart the SQL Server and SSRS.
- **6** Deploy the report.

B

FIPS Solutions

This appendix includes suggestions for resolving issues that you might encounter when using Reporting Center in an environment that complies with Federal Information Processing Standards (FIPS). If you need further assistance, please contact Technical Support (http://www.netiq.com/Support/contactinfo.asp).

B.1 Installation and Configuration Issues

Depending on the level of security applied in your environment, you might not be able to complete the setup program or run Reporting Center. If your environment is FIPS-encryption-enabled or just highly secured, try the following security configurations:

- To run the setup program, use the domain account that will be used as the Reporting Center service account.
- When launching the installation package or the Reporting Center executable file, use the Run as Administrator command.
- Instead of running the setup program using Remote Desktop Protocol (RDP), use **console** session 0 mode.
- If necessary, temporarily disable the FIPS encryption policy setting during installation only.
- Add the Reporting Center service account to the local security policy settings for Impersonation and delegation.
- Add the following user rights to the Reporting Center service account:
 - Enable computer and user accounts to be trusted for delegation
 - Impersonate a client after authentication
- Configure the SQL Server service account to use the Reporting Center service account.
- If necessary, temporarily disable UAC for the Reporting Center service account during installation.
- Verify the IIS IUSRS group permissions on the Reporting Center, IIS, and ASP.NET directories.
- Verify the Components Services (dcomcnfg) MSDTC security configurations, and enable them for network access.
- Enable the SQL Server Browser Service on servers where Reporting Center components will be hosted.
- Where the Windows Firewall is enabled, add explicit exceptions for IIS, SQL, Analysis Services, MSDTC, and Integration Services, where appropriate.
- Where the Windows Firewall is enabled, add explicit exceptions for the
- Reporting Center Console (NRConsole.exe) after Reporting Center has been installed successfully.

B.2 SSRS Report Manager Issue

According to Microsoft, Microsoft SQL Server 2008 Reporting Services and SQL Server 2008 R2 Reporting Services have the following limitation.

Report Manager fails after you enable FIPS-compliant algorithms in Local Security Policy

When running Microsoft SQL Server 2008 Reporting Services and SQL Server 2008 R2 Reporting Services, you cannot use Report Manager if you enable the following Local Security Policy:

System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing.

There is no workaround for this issue. To use Report Manager, disable the setting and restart the Report Server service. For more information about this issue, see http://msdn.microsoft.com/en-us/library/ms345220.aspx.

For additional configuration options, see Microsoft Knowledge Base article (http://support.microsoft.com/kb/911722).