

IDOL Find

Software Version 12.9

Administration Guide



Document Release Date: June 2021
Software Release Date: June 2021

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Contents

Part I: Getting Started	7
Chapter 1: Introduction	9
Chapter 2: Prerequisites	11
Required IDOL Components	11
IDOL Content Data Index Requirements	11
IDOL Document Security	11
Optional IDOL Components	12
Third-Party Software	12
Find Home Directory	12
Chapter 3: Install Find	15
Available Formats	15
Interactive Installer	15
Zip Package	15
Install Find with the Interactive Installer (Recommended)	16
Install Find Manually Using the Zip Package	16
Use the Executable .war File to Run Find	16
Install Find as a Service on Linux	16
Install Find as a Windows Service	18
Upgrade Find	18
Revert to a Previous Version of Find	19
Chapter 4: Set Up Find	21
Run Initial Find Configuration	21
Configure Statistics Server	21
User Roles	22
Create IDOL Community Roles	23
Clustering	23
Part II: Configure Find	25
Chapter 5: Configure Find on the Settings Page	27
Configure IDOL View Server	27
Configure MMAP Integration	28
Configure Map Visualizations	29
Configure Conversations with Answer Server	30
Configure Find to Apply ControlPoint Policies	30
Enable Polling for Saved Searches	31
Upload a Custom Logo	32
Chapter 6: Configure Find Using the Configuration File	33
Configure User-Friendly Names for Fields and Values	34
Configure Fields to Show or Hide in Document Previews	35

Configure Fields to Export	37
Configure the Order of Filters	38
Configure the Result Sort Order	39
Configure the Order of Parametric Fields	40
Configure the Sort Order of Parametric Values	41
Configure Parametric Filters to Never Show or Always Show	42
Configure Find with Different IDOL Document Root Fields	43
Change the IDOL Reference Field	43
Change the IDOL Stored State Field	44
Change or Add Location Field Names	44
Configure the Trending Visualizer	48
Configure the Date Field	48
Configure the Number of Field Values to Display	48
Configure the Number of Date Ranges to Use	49
Change the Maximum Number of Documents Used to Calculate a Topic Map	50
Change the Maximum Number of Documents to Use to Compare Searches	50
Change the Maximum Number of Documents to Export	51
Change the Result Tabs	51
Enable or Disable the Filter Search Bar	53
Enable or Disable the Related Concepts Panel	54
Use Profiles to Provide User-Specific Content	54
Configure the Related Users Tab	56
Enable Direct Viewing of Particular URLs	58
Open a Shared Search as a New Query	59
Customize Error Messages	59
Exclude Databases from Queries	60
Configure Entity Search	60
Modify the Length of a Document Summary	63
Change the Highlight Color	64
Configure List View	65
Configure Combine Method for Query	65
Chapter 7: Configure Dashboards	66
Find Dashboards	66
Dashboard Configuration	67
Dashboard Grid Size	69
Widgets	70
Widget Configuration	71
Topic Map Widget	72
Results List Widget	73
Sunburst Widget	74
Trending Widget	75
Map Widget	77
Video Panel Widget	79
Static Content Widget	80
Static Image Widget	80
Current Time/Date Widget	81

Time Last Refreshed Widget	82
Dashboard Export Notes	83
Example Dashboard Configuration	83
Chapter 8: Configure Applications	92
Configure Application Links	92
Chapter 9: Configure Templates	94
Configure Templates	94
Create Template Files	96
Example Templates	99
Simple Template	99
Multiple Format Styles	99
Chapter 10: Configure Find with System Properties	102
Configure the Log File Locations	102
Advanced Log Configuration	103
Tomcat Access Log Configuration	103
Configure IDOL Logs	104
Use an Action ID	105
Configure Cache Size	105
Configure the Java Heap Size	106
Configure Default User Roles	106
Configure Find to Use SSL	107
Configure Find to Trust a Custom Certificate Authority	108
Configure Session Timeout	109
Rename the Session Cookie	110
Configure Find to Add User Identifiers to Queries	111
Configure Find with a Reverse Proxy	111
Configure Find to Use the Reverse Proxy	112
Set the Reverse Proxy System Property	112
Configure the Reverse Proxy	113
Apache 2	113
SAML	114
NGINX	115
Internet Information Services (IIS)	115
Configure Find to Use a Single Pre-Authenticated User	116
 Send documentation feedback	 117

Part I: Getting Started

This section provides an introduction to Micro Focus Find, and describes how to install the application and perform the initial set up.

- [Introduction](#)
- [Prerequisites](#)
- [Install Find](#)
- [Set Up Find](#)

Chapter 1: Introduction

Micro Focus Find is an end-user search interface for IDOL.

Find supports the following functionality:

- **Advanced search.** Refine searches by database, date, or parametric values.
- **Document preview.** Find uses the IDOL View component to render near-native views of the source documents for your search results in a web browser. The Document Preview feature works with View server and documents in source repositories.
- **Query manipulation.** Find applies synonym and blacklist rules when you use the IDOL Query Manipulation Service as a back end for your search. You can use IDOL Data Admin to create and manage these rules.
- **Results manipulation.** Find applies pin-to-position promotions when you use the IDOL Query Manipulation Service as a back end for your search. You can use IDOL Data Admin to create and manage these promotions.
 - **Results augmentation.** Find applies spotlight promotions when you use the IDOL Query Manipulation Service as a back end for your search. You can use IDOL Data Admin to create and manage these promotions.
- **Document security.** You can set up document security so that only users with appropriate permissions can access the documents, or even see them in search results.
- **Visualizations.** You can view results as topic maps, sunburst charts, maps, or in table format, as well as in list format.
- **Save searches.** You can save searches and run them again later, save a result set as a snapshot, or compare two or more saved searches.

NOTE: From the 11.0 release, Find includes Business Information for Human Intelligence (BIFHI); visualizations, saved searches, and comparisons are available only to users with the FindBI role (see [User Roles, on page 22](#) for more information).

For more information on additional IDOL components that work with Find, see [Required IDOL Components, on page 11](#) and [Optional IDOL Components, on page 12](#).

Chapter 2: Prerequisites

This section describes the required and optional IDOL components and third-party software needed to run Find. It also specifies how to set up the Find home directory.

- [Required IDOL Components](#) 11
- [Optional IDOL Components](#) 12
- [Third-Party Software](#) 12
- [Find Home Directory](#) 12

Required IDOL Components

Before you install Find, you must install and configure the following IDOL components:

- IDOL Community 12.9 (Find requires access to the ACI and service ports).

NOTE: IDOL Community requires an IDOL Agentstore subcomponent. However, you do not need to configure the details of the IDOL Community Agentstore component in Find unless you want to use the related users tab (see [Configure the Related Users Tab, on page 56](#)).

- IDOL Content 12.9 (Find requires access to the ACI and service ports).
- IDOL View Server 12.9 (Find requires access to the ACI and service ports).

If you want to use a Connector for viewing, Find also requires access to the ACI and service ports for the connector. See [Configure IDOL View Server, on page 27](#).

IDOL Content Data Index Requirements

In general, Find does not place restrictions on the data that you store in the IDOL Content component.

However, if you index your data in XML format, you must use <DOCUMENTS><DOCUMENT> as your top level fields, to ensure that Find treats the contents consistently.

IDOL Document Security

You can use IDOL Document Security in Find. In this case, Find requests security information from the IDOL Community component, and uses it to manage your user sessions. The security token contains information about the groups and permissions that the user has, which the IDOL Content component uses to control access to your documents.

For information about how to set up document security in IDOL, refer to the *IDOL Document Security Administration Guide*.

NOTE: The IDOL Community security tokens have an expiration time. When the security token expires, the user session in Find ends. The user must log in to Find again to generate a new token.

Optional IDOL Components

The following IDOL components are optional:

- IDOL Query Manipulation Server (QMS) 12.9 (Find requires access to the ACI and service ports).

NOTE: IDOL QMS sends queries to an IDOL Content component data index. The IDOL Content component that you use must be the same for both QMS and the Find configuration (see [Required IDOL Components, on the previous page](#)).

IDOL QMS also requires an IDOL Agentstore subcomponent. However, you do not need to configure the details of the IDOL QMS Agentstore component in Find.

- IDOL Statistics Server 11.3.0 (Find requires access to the ACI and service ports).
- IDOL Answer Server 12.9 (Find requires access to the ACI and service ports).
- IDOL Agentstore component 12.9 (Find requires access to the ACI and service ports).

NOTE: Your IDOL Community component must have access to an Agentstore component. However, Find needs access only if you want to configure the related users tab. See [Configure the Related Users Tab, on page 56](#).

Third-Party Software

Find requires the following third-party software:

- Java 8 or Java 11

Find Home Directory

You must specify the Find home directory as a Java system property. Depending on how you deploy the application, you can do this either in a startup script or within the appropriate application server configuration.

The home directory contains the following files:

- The Find configuration file (`config.json`). If this file is not found, Find generates a default configuration file when the application starts.

You can edit the configuration file either from the Settings page in the application (recommended), or manually in a text editor. If you manually edit the file, you must restart Find for any configuration changes to take effect.

- The Find customization folder. This directory contains additional configuration files for additional customizable features, such as dashboards and application links. See [Configure Dashboards, on page 66](#) and [Configure Applications, on page 92](#).
- The Find logs folder. This directory contains the application log files, which contain details of application usage and any errors.
- The Find data folder. This directory contains the local database for the saved searches.

If you need to contact support, include the Find home directory as a zip file when you send your query.

NOTE: By default, the installer stores the Find home directory in the ProgramData folder, which might be hidden by default in Windows.

Chapter 3: Install Find

Find is available as an interactive installer.

Alternatively, you can install Find as an IDOL component by running the IDOL Server installer. For more information, see the *IDOL Server Getting Started Guide*.

NOTE: To upgrade to Find 12.9 from an earlier version, you must delete your existing configuration file before you install the new version. Micro Focus also recommends that you back up your database for saved searches before you upgrade.

For more information, see [Upgrade Find, on page 18](#).

- [Available Formats](#) 15
- [Install Find with the Interactive Installer \(Recommended\)](#) 16
- [Install Find Manually Using the Zip Package](#) 16
- [Upgrade Find](#) 18

Available Formats

Find is available in two different formats:

- an interactive installer
- a zip package containing the components

You can also install Find as an IDOL component by running the IDOL Server installer. For more information, see the *IDOL Server Getting Started Guide*.

Interactive Installer

Micro Focus recommends that you install Find by using the interactive installer. This process creates all required directories, and sets up Find to run as a service. During installation, you specify the Find home directory and the paths for installation.

Zip Package

The Find zip package contains an executable Java .war file. Unlike traditional Java web applications, Find does not require a stand-alone application server (for example, Tomcat), because one is embedded within the .war file.

Install Find with the Interactive Installer (Recommended)

Use the following procedure to install Find on Windows or Linux by using the interactive installer.

To install Find

- Run the installer as an Administrator user, and then follow the instructions, supplying the correct information when prompted.

Find is installed at the location you specify. Find is available on your machine as a service named `MicroFocus-Find`, which you can start and stop from the Windows services manager.

NOTE: By default, the installer stores the Find home directory in the `ProgramData` folder, which might be hidden by default in Windows.

Before you start Find, follow the steps in [Run Initial Find Configuration, on page 21](#), and ensure that you have set up the required user roles in IDOL Community. A user must be a member of at least the `FindUser` role to log into Find. See [User Roles, on page 22](#) for more information.

Install Find Manually Using the Zip Package

The following sections describe how to install Find by using the zip package.

Use the Executable .war File to Run Find

Use the following command to run Find:

```
java -Didol.find.home=[home directory] -Dserver.port=[port] -jar find.war -  
uriEncoding utf-8
```

NOTE: On Linux, Micro Focus recommends that you use `/opt/find` as the install directory and `/opt/find/home` as the home directory. On Windows, the home directory might be `C:\Micro Focus\Find`. In either case, ensure that the user running Find has read and write permissions for the home directory.

Install Find as a Service on Linux

Use the following procedure to install Find as a service on Linux.

1. Create a user and group to run Find. Micro Focus recommends that you use `find` as both the user name and the group name:

```
$ useradd find
```

2. Create a directory in which to install Find. Micro Focus recommends that you use `/opt/find` as the installation directory:

```
$ mkdir /opt/find
```

3. Create a directory to serve as the home directory for Find. Micro Focus recommends that you use `/opt/find/home` as the home directory:

```
$ mkdir /opt/find/home
```

4. Copy `find.war` to the installation directory:

```
$ cp find.war /opt/find/
```

5. Recursively change the ownership of the installation directory:

```
$ chown -R find:find /opt/find
```

6. Deploy the startup script.

System V

```
$ cp install/linux/sysv/find.sh /etc/init.d/find
```

```
$ chmod +x /etc/init.d/find
```

```
$update-rc.d find defaults 99
```

Upstart

```
$ cp install/linux/upstart/find.conf /etc/init/
```

```
$ chmod +x /etc/init/find.conf
```

Systemd

```
$ cp install/linux/systemd/find.service /etc/systemd/system/
```

7. If you have used any non-default paths or settings during installation, edit the startup script to contain the corresponding values.

8. Start the application.

System V

```
$ sudo /etc/init.d/find start
```

Upstart

```
$ sudo service find start
```

Systemd

```
$ sudo systemctl start find
```

Install Find as a Windows Service

To run Find as a Windows service, you must download a copy of the Windows service wrapper from <https://github.com/microfocus-idol/winsw>, and change the name of the `winsw.exe` executable file to `find.exe`.

Ensure that the Find home directory and port are correctly configured in the `find.xml` configuration file. You must also ensure that `find.exe`, `find.xml`, and `find.war` are all in the same directory.

Run the following command from the Windows command line to install Find as a service:

```
find.exe install
```

NOTE: You can also use the following commands with `find.exe`:

- `uninstall`
- `start`
- `stop`
- `status`

For more information, see <https://github.com/microfocus-idol/winsw>.

Upgrade Find

To upgrade to Find 12.9 from an earlier version, you must delete your existing configuration file. The configuration files might not be compatible, and if you attempt to run Find with a configuration file from an earlier version, it might have unexpected results.

Micro Focus also recommends that you back up your database for saved searches before you upgrade (that is, copy the `data` directory in the home directory). During the upgrade process, Find migrates the database to the new version. If you need to revert to the earlier version of Find, you must restore the `data` directory and configuration file.

To upgrade Find

1. Back up the `data` directory in the Find home directory. This directory contains the database file that stores saved search data. The backup is required if you need to revert to the previous version of Find after upgrading.
2. Back up the `config.json` file in the Find home directory, to use as a reference.
3. Delete the `config.json` file from the home directory.
4. Run the new Find installer, or replace the `.war` file in the Find home directory. You must use the same home directory as the installed version of Find.
5. Follow the installation and setup instructions in [Install Find, on page 15](#).

The installer migrates your database to the latest version, and generates a new `config.json` file for the new

TIP: You can use the backup copy of the `config.json` file as a reference to specify your configuration settings in the upgraded version.

Revert to a Previous Version of Find

The Find upgrade process modifies the database, and the configuration settings might not be compatible between different versions. If you need to revert to a previous version of Find, you must restore the configuration file and data directory to the earlier version.

CAUTION: Any data that you save after you upgrade Find is lost when you revert to an earlier version.

To revert to a previous version of Find

1. Uninstall the existing version of Micro Focus Find Administration Guide.
2. Follow the instructions in [Install Find, on page 15](#) to install the previous version.
3. Restore the backup copies of `config.json` and the data directory that you made during the upgrade process to the Find home directory.

Chapter 4: Set Up Find

This section describes how to run the initial required Find configuration to get the application running and working with your back end IDOL components.

For more information about configuration and customization, see [Configure Find, on page 25](#)

- [Run Initial Find Configuration](#)21
- [Configure Statistics Server](#)21
- [User Roles](#)22
- [Clustering](#)23

Run Initial Find Configuration

Use the following procedure to configure Find.

1. Run Find once without a `config.json` file in your Find home directory to generate a default file.
2. Open the generated `config.json` file in a text editor. Find the generated default user name and password (`login.defaultLogin.username` and `login.defaultLogin.password`).
3. Go to `http://FindHost:FindPort`, where *FindHost* is the IP address or name of the machine on which Find is installed, and *FindPort* is the port that you have installed Find on (for example, 8080).
4. Log in with the default user name (this is normally set to `admin`) and password from the configuration file.

The Settings page opens.

5. Fill in the details of your backend IDOL servers. Click **Test Connection** for each server to confirm that the Find server can establish a connection to each server.
6. Click **Save Changes**.

Find is now ready for use.

NOTE: To return to the Settings page at any time, click the cog in the top right corner of the application, and then click **Settings** in the list of options.

For more information about configuring Find, see [Configure Find, on page 25](#).

Configure Statistics Server

Find can optionally use Statistics Server to store statistics about user searches. For example, it tracks statistics about the times users open a source document or preview, and the times a user leaves a

search without viewing any results.

By default, Find statistics are not enabled. You can enable statistics by configuring Statistics Server on the Find Settings page. See [Run Initial Find Configuration, on the previous page](#).

In addition, you must use a special configuration file for your Statistics Server, which contains the appropriate statistics definitions for Find. This configuration file is included in the Find ZIP package.

NOTE: The Find interactive installer does not include the configuration file.

To configure Statistics Server

1. Open `install/statsserver/statsserver-required-config.cfg`. This file contains the statistics definitions that the Statistics Server requires.
2. Copy the definitions from `statsserver-required-config.cfg` to your Statistics Server configuration file.

NOTE: If you want to include extra statistics definitions that are not included in `statsserver-required-config.cfg`, those extra statistics must have an IDOL name in order for the server to start.

3. Restart Statistics Server.

For information on how to send statistics to Statistics Server, see the *Query Manipulation Server Administration Guide*.

User Roles

Find user roles control the access that a particular user has to the Find user interface. Each role provides access to a particular set of Find features, and you assign your users to one or more roles that they need to access the features that you want them to use.

Users and roles are stored in the IDOL Community component. Find requires three roles in IDOL Community:

- `FindUser`. The search end-user role.
- `FindAdmin`. This role controls access to the Settings page. Micro Focus does not recommend that you grant the `FindAdmin` role to end users who do not have system administrator responsibilities.
- `FindBI`. Users with the `FindBI` role have access to BIFHI features in Find (Sunburst charts, topic maps, comparisons, saved searches, and so on).

NOTE: Users must belong to the `FindUser` role to log in to the application; users with only the `FindAdmin` or `FindBI` roles cannot log in.

Create IDOL Community Roles

Find does not automatically create the roles in IDOL Community. You, or your IDOL system administrator, must create these roles.

The following procedure describes how to create the roles directly in IDOL Community.

To create IDOL Community roles

1. In your web browser, go to `http://CommunityHost:CommunityPort/action=admin` (where *CommunityHost* is the IP address or name of the machine on which Community is installed, and *CommunityPort* is the port that you have installed Community on).

The IDOL Admin interface for Community opens.

2. Click **Control > Roles**.
3. Click **Add Role** to create the roles.

TIP: You can also use this page in the IDOL Admin interface to assign users to the roles, by selecting a role and clicking **Add User**.

To manage the users in your system, click **Control > Users**.

Clustering

Find does not currently support clustering of the web application.

Part II: Configure Find

This section provides information about more advanced configuration for Find to customize the display and functionality.

- [Configure Find on the Settings Page](#)
- [Configure Find Using the Configuration File](#)
- [Configure Dashboards](#)
- [Configure Application Links](#)
- [Configure Templates](#)
- [Configure Find with System Properties](#)

Chapter 5: Configure Find on the Settings Page

This section describes the features that you can configure by using the Settings page in the Find interface, and gives instructions on how to set up those features.

- [Configure IDOL View Server](#) 27
- [Configure MMAP Integration](#) 28
- [Configure Map Visualizations](#) 29
- [Configure Conversations with Answer Server](#) 30
- [Configure Find to Apply ControlPoint Policies](#) 30
- [Enable Polling for Saved Searches](#) 31
- [Upload a Custom Logo](#) 32

Configure IDOL View Server

IDOL View Server converts original documents into HTML format for viewing in a Web browser. It can also highlight search terms in the document, when displaying a search results. Find uses IDOL View Server to create the document previews in searches.

There are three viewing modes. The appropriate one to use depends on how you index your documents, and your View Server configuration:


- **Universal.** In this mode, Find requests document from a View Server that is configured in Universal Viewing mode. This mode allows View to use information in your data index to work out how to retrieve the original documents for viewing, by using a file, Web URL, or the Distributed Connector. To use this mode, you must enable universal viewing in your View Server configuration file. For more information, refer to the *IDOL Server Administration Guide*.
- **Reference Field.** In this mode, Find requests documents from View Server by using a document reference field, which you can configure. In this case, the reference must be sufficient to identify the original location of the document, such as a URL or file path (if you configure IDOL View Server to view local files).
- **Connector.** In this mode, Find uses a connector to retrieve the original document. The connector can retrieve the original document from the source repository, which simplifies the storage and retrieval. You must provide the host and port of the connector to use. Find uses the AUTN_IDENTIFIER document field and connector group to request the original document.

You can use any connector that supports the View action. If you want to retrieve documents from multiple external repositories, you can use the Distributed Connector. For more information about the IDOL configuration for this set up, refer to *IDOL Expert*.

The option that you choose depends on how you store and access your documents. If you can access all your documents by file path or URL, use the **Reference Field** option. If you use an external repository with its own authentication to store your documents (such as Microsoft Exchange, or Microsoft SharePoint), then you can use the **Connector** mode to simplify access and retrieval.

Users with the **FindAdmin** role can use the Settings pages to configure the IDOL View Server.

To configure IDOL View Server

1. In the toolbar on the top right of the page, click .
2. In the list, click **Settings**.
The Settings page opens.
3. Find the **View** section, and specify the host and ACI port of your IDOL View Server.
4. From the **Viewing Mode** list, select the mode to use. Depending on the mode that you use, further options are required:
 - In **Reference Field** mode, specify the IDOL reference field to use to identify your documents in IDOL View Server.
 - In **Connector** mode, specify the host name and ACI port of the connector to use to retrieve documents.
5. Click **Test Connection** to ensure that Find can connect to your IDOL View Server and Distributed Connector (if required).

NOTE: In Universal mode, **Test Connection** checks the connection to the IDOL View Server, but does not check whether the other components that View needs to access are configured correctly. You must check any additional components in your View Server configuration.

6. Click **Save Changes**.

Configure MMAP Integration

You can configure Find to integrate with Media Management and Analysis Platform (MMAP). Configuring Find in this way means that you can open indexed rich media documents in the MMAP application from a button in preview mode or document detail view, for richer video and audio exploration.

To configure MMAP integration

1. Click the cog in the top right corner of the application, and then click **Settings**.
2. In the **MMAP** section, enter the MMAP host and port, for example `http://localhost:8080`.

NOTE: This URL must be resolvable by the Find end-user's Web browsers, because it is

used for hyperlinks between Find and MMAP (rather than being used for Find and MMAP server-to-server communications).

3. Click **Enable MMAP**.
4. Click **Save Changes**, then confirm your changes.

Configure Map Visualizations

You can enable the Map visualizer to display the location data for results documents. When you enable this functionality, the Find user interface includes a Map View results visualizer tab.

NOTE: The default configuration uses the IDOL fields LAT and LON to retrieve location information from your documents. If you want to use different fields, or multiple location field sets, you must configure them in the Find `config.json` configuration file. See [Change or Add Location Field Names, on page 44](#).

To enable map visualizations

1. Click the cog in the top right corner of the application, and then click **Settings**.
2. In the **Mapping** section, specify the following settings:
 - **Tile Server Url Template.** The full Slippy Map Tilenames (SXYZ) URL for requesting a tile from an accessible tile server, with the *x*, *y*, and *z* coordinates and *S* server replaced with curly brace variables. For example, `https://{s}maps.example.com/tiles/{z}/{x}/{y}.png`.
 - **Attribution.** An optional string to display in the bottom right corner of the map (for example, a copyright statement).
3. In the **Results to load each time** section, choose the maximum number of location points that you want to be able to render on your map view.

NOTE: Setting this to a high number makes the map slow to render.

4. Click **Enable Mapping**.
5. Click **Save Changes**, and then confirm your changes.

You can use any image file type that your browser supports.

There are many compatible tile servers available as a service over the internet, including Mapbox (<https://www.mapbox.com>), MapQuest (<http://www.mapquest.com/>), and most OpenStreetMap servers.

CAUTION: Ensure that you check the terms of use before you use these services.


You can also implement your own Tile Map Service to work with the Map Visualizer, as long as you use an accepted format for the tile names. For more information, see <http://leafletjs.com/reference.html#url-template>.

Configure Conversations with Answer Server

You can configure Find to display a chat box to use with the Answer Server conversation module. You can configure the chat box on the Find settings page, by providing the host and port of your Answer Server, and the ID of the conversation system to use for conversations in the Find user interface.

NOTE: When Find starts a conversation session with Answer Server, it supplies the Find username in the `USER_NAME` variable. Similarly, if you use IDOL Community authentication, and the user has a security info string, Find supplies it as the `SECURITY_INFO` property, so that it can be used when the conversation system sends questions to other answer systems.

To configure conversations with Answer Server

1. In the toolbar on the top right of the page, click .
2. In the list, click **Settings**.
The Settings page opens.
3. Find the **Answer Server** section, and specify the host and ACI port of your Answer Server.
4. In the **Conversation System ID** box, type the name of the conversation system to send actions to for the conversation. You can find this value in the Answer Server configuration.
5. If Answer Server is disabled, click **Enable Answer Server** to allow Find to send actions to Answer Server.
6. Click **Test Connection** to ensure that Find can connect to your Answer Server, and that your conversation system information is valid.
7. Click **Save Changes**.

Configure Find to Apply ControlPoint Policies


You can configure Find to connect to Micro Focus ControlPoint, which allows you to apply ControlPoint policies to your search results.

IMPORTANT: Find can connect to ControlPoint version 5.9 or later.

When you configure Find with a connection to ControlPoint, it enables a button in your search pages to apply a policy (for unsaved search, saved search, and snapshots).

NOTE: The policy button is available only to users with the `FindBI` role. See [User Roles](#), on

To configure Find to connect to ControlPoint

1. In the toolbar on the top right of the page, click .
2. In the list, click **Settings**.
The Settings page opens.
3. Find the **ControlPoint** section, and specify the host and port of your ControlPoint service.
4. If ControlPoint is disabled, click **Enable ControlPoint** to allow Find to connect to ControlPoint.
5. Click **Test Connection** to ensure that Find can connect to your ControlPoint.
6. Click **Save Changes**.

For more information about how to set up ControlPoint, refer to the *Micro Focus ControlPoint Administration Guide*.

Enable Polling for Saved Searches

Users with the FindBI role can save their searches in Find as a tab which they can return to later. Because databases are often updated or changed, the result set might change over time. You can configure Find to poll for any changes to the saved search results since the search was saved, and then display the number of new results in the tab.

To enable or disable polling

1. Click the cog in the top right corner of the application, and then click **Settings**.
2. In the **Saved Searches** section, click **Enable Polling** or **Disable Polling** as appropriate.
3. Click **Save Changes**.

To specify the interval between polling attempts


1. Click the cog in the top right corner of the application, and then click **Settings**.
2. In the **Saved Searches** section, type the number of minutes that should elapse in between polling attempts in the **Polling Interval (in minutes)** field.
3. Click **Save Changes**.

NOTE: Polling for saved searches counts as user activity, and delays a session timeout for the user. If your polling interval is shorter than your session timeout, the polling causes the session to continue until you close the browser window. See [Configure Session Timeout, on page 109](#).

Upload a Custom Logo

You can modify Find to display a custom logo, by using the Customizations settings page. This page allows you to upload and select a logo for the Find splash screen (available to users who do not have the **FindBI** user role), and the navigation bar.

To upload a custom logo

1. In the toolbar on the top right of the page, click .
2. In the list, click **Customizations**.
The Customizations page opens.
3. To add a new main splash screen logo, click the upload box in the Splash Screen Logo section of the page and navigate to the file that you want to upload, or drag a logo file to the upload box.
4. To add a new navigation bar logo, click the upload box in the Small Logo section of the page and navigate to the file that you want to upload, or drag a logo file to the upload box.
5. To change the logo to use, find your logo in the appropriate list and click **Apply**.
6. Refresh your Web browser to display your changes.

Chapter 6: Configure Find Using the Configuration File

This section describes the features that you can configure by editing the `config.json` file in the Find home directory, and gives instructions on how to set up those features.

- [Configure User-Friendly Names for Fields and Values](#) 34
- [Configure Fields to Show or Hide in Document Previews](#) 35
- [Configure Fields to Export](#) 37
- [Configure the Order of Filters](#) 38
- [Configure the Result Sort Order](#) 39
- [Configure the Order of Parametric Fields](#) 40
- [Configure the Sort Order of Parametric Values](#) 41
- [Configure Parametric Filters to Never Show or Always Show](#) 42
- [Configure Find with Different IDOL Document Root Fields](#) 43
- [Change the IDOL Reference Field](#) 43
- [Change the IDOL Stored State Field](#) 44
- [Change or Add Location Field Names](#) 44
- [Configure the Trending Visualizer](#) 48
- [Change the Maximum Number of Documents Used to Calculate a Topic Map](#) 50
- [Change the Maximum Number of Documents to Use to Compare Searches](#) 50
- [Change the Maximum Number of Documents to Export](#) 51
- [Change the Result Tabs](#) 51
- [Enable or Disable the Filter Search Bar](#) 53
- [Enable or Disable the Related Concepts Panel](#) 54
- [Use Profiles to Provide User-Specific Content](#) 54
- [Configure the Related Users Tab](#) 56
- [Enable Direct Viewing of Particular URLs](#) 58
- [Open a Shared Search as a New Query](#) 59
- [Customize Error Messages](#) 59
- [Exclude Databases from Queries](#) 60
- [Configure Entity Search](#) 60
- [Modify the Length of a Document Summary](#) 63
- [Change the Highlight Color](#) 64
- [Configure List View](#) 65
- [Configure Combine Method for Query](#) 65

Configure User-Friendly Names for Fields and Values

You can configure Find to display user-friendly names for fields and values in the user interface, in place of the values from your raw data. Find uses the display names that you specify in the parametric filter lists, as well as document metadata and the fields in document previews.

NOTE: You cannot modify the display name for the standard metadata fields that display in the full page document preview (for example, `title`, `reference`, and `database`).

You configure user-friendly display names by adding and modifying the `fieldsInfo` section of the Find configuration file.

To configure display names for fields and values

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find or add the `fieldsInfo` section.
4. Create a property and definition object for each field that you want to modify. You can use the following properties:

<code>names</code>	(Array, strings) An array of raw field names that you want to apply the field and value display names to.
<code>displayName</code>	<p>(String) The user-friendly display name to use in the Find user interface.</p> <p>NOTE: If you specify a display name, Find applies it to all the fields in the <code>names</code> array. This might result in multiple identical field names listed in the parametric filter list, corresponding to the different raw fields in your data.</p> <p>In general, Micro Focus recommends that you do not specify the display name if you set multiple values in <code>names</code>. You can specify multiple field names without the display name to normalize the field values to consistent display values.</p>
<code>values</code>	<p>(Object) A JSON object to specify a field value and the display value to use for that value. This object has the following subproperties:</p> <ul style="list-style-type: none"> • <code>value</code> (string). The raw data value. • <code>displayValue</code> (string). The user-friendly display name to use for this value.
<code>advanced</code>	(Boolean) A Boolean value that specifies whether to display this field in document previews. For more information, see Configure Fields to Show or

	Hide in Document Previews, on the next page.
csvExport	(Boolean) A Boolean value that specifies whether to include this field in the CSV export. For more information, see Configure Fields to Export, on page 37.

For example:

```
"fieldsInfo": {
  "country": {
    "names": [ "COUNTRY_ORIGIN" ],
    "displayName": "Country",
    "values": [ { "value": "UK", "displayValue": "United Kingdom of Great
Britain and Northern Ireland" } ]
  },
  "elevation": {
    "names": [ "PLACE_ELEVATION" ],
    "displayName": "Place Elevation (ft)"
  }
}
```

The user interface displays a field called *Country*, with the value *United Kingdom of Great Britain and Northern Ireland*, and a *Place Elevation (ft)* field.

5. Save the file, and then restart Find to apply your configuration changes.

Configure Fields to Show or Hide in Document Previews

You can configure Find to show or hide particular fields in the results list document previews.

In the default Find configuration, the document preview does not show any fields for text documents. For videos, it shows the URL, content type, and transcript (if one exists).

When you expand the preview, the full document display page has a metadata panel. This shows some standard document metadata, such as the title, reference, and date, as well as an automatically generated document summary. By default, it also includes the URL for all documents, and the content type for videos. You can also display any additional IDOL fields associated with the document by clicking **Show Advanced**.

You can modify your Find configuration to show additional fields in the document previews, or to hide certain fields.

NOTE: You cannot hide the standard metadata or document summary in the full document display page.

You control the display of fields in the document preview by modifying the `fieldsInfo` section of the Find configuration file.

To modify the fields that show in the document preview

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find or add the `fieldsInfo` section.
4. Create a property and definition object for each field that you want to show, or modify an existing one. The following table describes the properties that you can use to modify the field preview display.

names	(Array, strings) An array of raw field names that you want to apply the settings to.
advanced	<p>(Boolean) A Boolean value that specifies whether to display this field in the document preview.</p> <p>Set <code>advanced</code> to <code>false</code> if you want to display the field as part of the document preview. In this case, the field is displayed in the preview, and also in the metadata section of the document display page when a user expands the preview.</p> <p>Set <code>advanced</code> to <code>true</code> to hide the field in the document preview. In this case, the field is available only in the document display page when a user clicks Show Advanced to show all available fields.</p> <p>NOTE: For videos, the document preview always includes the transcript field if there is a transcript (that is, you cannot hide this transcript in the preview).</p>
displayName	(String) The user-friendly display name to use in the Find user interface. For more information, see Configure User-Friendly Names for Fields and Values, on page 34 .
values	(Object) A JSON object to specify a field value and the display value to use for that value. For more information, see Configure User-Friendly Names for Fields and Values, on page 34 .
csvExport	(Boolean) A Boolean value that specifies whether to include this field in the CSV export. For more information, see Configure Fields to Export, on the next page .

For example:

```
"fieldsInfo": {
  "previewFields": {
    "names": [ "author", "description" ],
    "advanced": false
  },
  "advancedFields": {
```

```

    "names": [ "contenttype" ],
    "advanced": true
  }
}

```

In this example, Find displays the author and description fields in the document preview. It hides the contenttype field, which is then available only in the expanded document display view when a user clicks **Show Advanced**.

5. Save the configuration file, and then restart Find to apply your configuration changes.

Configure Fields to Export

You can control the fields that Find exports when a user exports the results to CSV.

By default, Find exports all document fields. You can exclude particular fields from the export, in which case Find exports all field except for the excluded ones. You can also specify particular fields to explicitly include, in which case Find exports only the allowed fields.

You configure CSV export fields by modifying the `fieldsInfo` section of the Find configuration file.

TIP: You can also set a limit on the number of documents that Find exports in the CSV. See [Change the Maximum Number of Documents to Export, on page 51](#).

To configure the fields to export

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find or add the `fieldsInfo` section.
4. Create a property and definition object for each field that you want to modify. You can use the following properties:

<code>names</code>	(Array, strings) An array of raw field names that you want to apply the settings to.
<code>csvExport</code>	<p>(Boolean) A Boolean value that specifies whether to export this field in the CSV export.</p> <p>Set <code>csvExport</code> to false to exclude the field from CSV export. By default, Find includes all fields. You can use this option to exclude some fields.</p> <p>Set <code>csvExport</code> to true to explicitly include the field in the CSV export. If any fields in your configuration have <code>csvExport</code> set to true, Find exports only those fields.</p>

displayName	(String) The user-friendly display name to use in the Find user interface. For more information, see Configure User-Friendly Names for Fields and Values, on page 34.
values	(Object) A JSON object to specify a field value and the display value to use for that value. For more information, see Configure User-Friendly Names for Fields and Values, on page 34.
advanced	(Boolean) A Boolean value that specifies whether to display this field in document previews. For more information, see Configure Fields to Show or Hide in Document Previews, on page 35.

For example:

```
"fieldsInfo": {
  "country": {
    "names": [ "COUNTRY_ORIGIN" ],
    "displayName": "Country",
    "values": [ { "value": "UK", "displayValue": "United Kingdom of Great
Britain and Northern Ireland" } ]
  },
  "elevation": {
    "names": [ "PLACE_ELEVATION" ],
    "csvExport": false
  }
}
```

When a user exports a document, the CSV export does not include the PLACE_ELEVATION field.

5. Save the file, and then restart Find to apply your configuration changes.

Configure the Order of Filters

You can change the order in which different groups of filters appear in the sidebar.

To configure the order of filter groups

1. Go to the Find home directory.
2. Open config.json in a text editor.
3. In the filterOrder section, modify the order of the array options to the order in which you want them to appear. You can also add a hyphen (-) as an array item to add a space between two groups in the list of filters.

For example, the default order is:

```
"filterOrder": ["metaFilter", "indexesFilter", "datesFilter",
"geographyFilter", "documentSelectionFilter", "-", "parametricFilter"]
```

where

metaFilter	is the filter search box to allow you to filter the list of filters. See Enable or Disable the Filter Search Bar, on page 53 .
indexesFilter	is the list of data indexes (databases) for your data.
datesFilter	is the list of date filters.
geographyFilter	is the list of location filters.
documentSelectionFilter	is an option that allows users to manually deselect documents to exclude them (or to deselect all documents and manually reselect the documents to include).
parametricFilter	is the list of parametric fields. You can also modify the order that these parametric fields are displayed by updating the parametricOrder parameter. See Configure the Order of Parametric Fields, on the next page .

You can add the filters in any order. For example:

```
"filterOrder": ["metaFilter", "-", "parametricFilter", "-", "indexesFilter", "datesFilter", "geographyFilter"]
```

If you do not include one or more of the filter groups, Find lists it at the end, after the specified groups.

4. Save the file, and then restart Find to apply your configuration changes

Configure the Result Sort Order

In the Find user interface, users can choose the sort order for their search results. You can configure the options to display, and set a default sort option.

To configure the sort order

1. Go to the Find home directory.
2. Open config.json in a text editor.
3. Find the search section, or create one if it does not exist.
4. Set the defaultSortOption property to the name of the sort option that you want to use by default. You must define this option in the sortOptions object.
5. Add a sortOptions object to define the list of sort options that you want to make available. You can use your own name for each property in this object. Each entry must have the following properties:

sort	The IDOL Content component sort option. This property is the value that Find sends to Content in the Sort parameter. For the available options, refer to the <i>IDOL Content Component Reference</i> .
label	The name to use in the Find user interface for this sort option.

```
{
  "search": {
    "defaultSortOption": "bestMatch",
    "sortOptions": {
      "bestMatch": { "sort": "relevance", "label": "by relevance" },
      "newest": { "sort": "date", "label": "by date" }
    }
  }
}
```

- Restart Find to apply your configuration changes.

Configure the Order of Parametric Fields

You can change the order in which parametric fields appear in the sidebar.

To configure the order of parametric fields

- Go to the Find home directory.
- Open `config.json` in a text editor.
- In the `parametricOrder` section, list the fields in the order in which you want them to appear. For example:

```
"parametricOrder": ["company", "author", "category"]
```

NOTE: The names of the parametric fields need to match the IDOL field name.

- Save the file, and then restart Find to apply your configuration changes.

Any parametric fields that you list in the `parametricOrder` section appear at the top of the list.

If you do not specify a parametric order, by default the fields are listed alphabetically.

If there are parametric fields that you did not list in the `parametricOrder` section, these appear after the ordered fields, in the default sort order (that is, alphabetical). For example:

```
Company
Author
Category
Date Identified
Family
Genus
```


NOTE: Any fields that you add to the parametric never show list do not appear in the user interface. Similarly, if you have a parametric always show list, the interface does not display any fields that you specify in the parametric order that do not appear in the always show list. See [Configure Parametric Filters to Never Show or Always Show, on the next page](#).

Configure the Sort Order of Parametric Values

In the parametric field side bar, you can expand a field to view a short list of values for that field, and can click See All to view all values available for that field. By default, Find displays this full list in order of document count (that is, the first value in the list is the value that occurs in most result documents).

You can modify the order that Find displays these values by modifying the `parametricValuesSort` property in the `config.json` file.

To change the sort order for parametric values

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `uiCustomization` section, add the `parametricValuesSort` property. This property accepts one of the following string values (the options are case sensitive):

Off	Do not sort results.
Alphabetical	Order values in alphabetical order.
Date	Order values by date. The most recent date is listed first. For this option, the field must contain date values.
DocumentCount	Order values by the number of documents that contain this value. The value with the highest document count is listed first. This is the default value.
NumberDecreasing	Order values in numerical order, listing the highest number first. Non-numeric values are sorted alphabetically and ordered after the numeric data.
NumberIncreasing	Order values in numerical order, listing the lowest number first. Non-numeric values are sorted alphabetically and ordered after the numeric data.
ReverseAlphabetical	Order values in reverse alphabetical order.
ReverseDate	Order values by date. The earliest date is listed first. For this option, the field must contain date values.

ReverseDocumentCount	Order values by the number of documents that contain this value. The value with the lowest document count is listed first.
----------------------	--

For example:

```
"uiCustomization": {
  "parametricValuesSort": "Alphabetical"
}
```

4. Restart Find to apply your configuration changes.

Configure Parametric Filters to Never Show or Always Show

You can configure Find to always show or never show particular parametric filters. For example, if you have internal filters, you can configure Find so that they do not appear to your users.

To configure parametric filters that you never want to show

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `parametricNeverShow` section of the configuration file, specify a list of parametric fields that you never want to show. For example:

```
"parametricNeverShow": ["INTERNAL_FIELD", "FILE_TOO_LARGE", "HAS_BEEN_VIRUS_CHECKED"]
```

This setting removes the `INTERNAL_FIELD`, `FILE_TOO_LARGE`, and `HAS_BEEN_VIRUS_CHECKED` parametric fields from the lists of parametric fields sent to the client.

The user cannot see or work with these fields, although the fields are still visible in the metadata display.

NOTE: The names of the parametric fields need to match the IDOL field name.

4. Restart Find to apply your configuration changes.

To configure parametric filters that you want to always show

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `parametricAlwaysShow` section of the configuration file, specify a whitelist of parametric fields. For example:

```
"parametricAlwaysShow": ["COLOR", "PRICE", "MODEL"]
```

In the above example, the COLOR, PRICE, and MODEL fields are the only parametric fields that are available to filter by in the Find user interface. Any fields not included in the always show list are not displayed. If there are any fields in both the always show and the never show lists, the never show list takes priority and the field is not visible.

NOTE: The names of the parametric fields need to match the IDOL field name.

4. Restart Find to apply your configuration changes.

Configure Find with Different IDOL Document Root Fields

In most standard IDOL configurations, index XML files have a root field DOCUMENTS, which contains all the individual documents and fields. Depending on your IDOL configuration, you might have other root fields. In this case you must also configure Find to recognize the different document root fields so that it can extract the parametric fields from different documents.

To configure Find to recognize different IDOL root fields

1. Go to the Find home directory.
2. Open config.json in a text editor.
3. Find the idolFieldPathNormalizerXMLPrefixes property (or add it if it does not exist), and set it to an array of XML root fields that you want to use. For example:

```
"idolFieldPathNormalizerXMLPrefixes" : [ "DOCUMENTS", "ADMISSIONLIST" ]
```

4. Save the file, and then restart Find to apply your configuration changes.

NOTE: If you define custom field roots, you cannot use full field paths in your fieldsInfo configuration (in the names array). You must specify the leaf field node only. For example, if your documents include the field ADMISSIONLIST/DOCUMENT/COUNTRY_ORIGIN, specify it as COUNTRY_ORIGIN only:

```
"fieldsInfo": {
  "country": {
    "names": [ "COUNTRY_ORIGIN" ]
  }
}
```

Change the IDOL Reference Field

When Find requests a document from IDOL by its reference, it specifies that the reference value it requests is from the DREREFERENCE field. Specifying the field ensures that it retrieves the correct

document in cases where your documents have multiple reference fields (for example, if you index subfiles with a reference to the parent file).

In most systems, the IDOL Content component uses the default reference field `DRREFERENCE` as the main reference for your documents. If you use a different field as your main reference, you can modify the reference field that Find requests, by updating the `referenceField` property in `config.json`.

To change the IDOL reference field

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find the `referenceField` property, or add it if it does not exist, and set it to the name of the reference field that you want to use. For example:

```
"referenceField": "MainReference"
```

4. Restart Find to apply your configuration changes.

Change the IDOL Stored State Field

Find uses IDOL stored states for certain features, such as comparing two sets of search results. By default, the stored state tokens store the document IDs of the documents in a query, which Find uses to retrieve the documents.

In some cases, you might want to use the document references in stored states, rather than IDs. For example, if you distribute copies of your IDOL index and use a Distributed Action Handler (DAH) for queries, you must use references because documents might have different IDs in different copies of the index. In this case, you can configure Find to use a stored state field, which it passes to IDOL in its queries.

For more information about the stored state field, refer to the *IDOL Server Reference*.

To change the IDOL stored state field

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find the `storedStateField` property, or add it if it does not exist, and set it to the name of the reference field that you want to use in your stored states. For example:

```
"storedStateField": "MainReference"
```

4. Restart Find to apply your configuration changes.

Change or Add Location Field Names

By default, Find retrieves latitude and longitude information from the `LAT` and `LON` IDOL fields, respectively. When you are using these fields in your documents, you can configure map visualizations

by using the Find configuration settings page (see [Configure Map Visualizations, on page 29](#)).

You can also update the map configuration manually if you want to use different fields as the latitude and longitude values, or if you want to use multiple location values. In this case, you modify the map configuration object in your `config.json` file, and update the `fieldsInfo` configuration with any required fields. In this case, you can use split latitude and longitude fields, or a single field that contains POINT or POLYGON definitions in Well-known text (WKT) format (for example, IDOL fields with the `GeospatialType` field property set to `unified`).

The following table describes the properties that you can set in the map configuration section.

Property	Type	Description
<code>enabled</code>	Boolean	Set to true to enable the map visualizations in Find.
<code>attribution</code>	String	An optional string to include in the bottom right of the map visualization, for example a copyright notice.
<code>initialLocation</code>	Object	The location to use as the initial center point of the map visualization. This object contains the following properties: <ul style="list-style-type: none"> <code>latitude</code> (number). The latitude value of the initial location. <code>longitude</code> (number). The longitude value of the initial location.
<code>tileUrlTemplate</code>	String	The full Slippy Map Tilenames (SXYZ) URL for requesting a tile from an accessible tile server, with the <code>x</code> , <code>y</code> , and <code>z</code> coordinates and <code>S</code> server replaced with curly brace variables. For example, <code>https://{s}maps.example.com/tiles/{z}/{x}/{y}.png</code> .
<code>resultsStep</code>	Integer	The maximum number of location points that you want to be able to render on your map view. Setting this parameter to a high value can make the map slow to render.
<code>locationFields</code>	Array, objects	The details of the fields that you want to use to plot locations. Each location field object defines the fields that contain the location information in one of the following ways: <ul style="list-style-type: none"> <code>geoindexField</code> (string). The name of the field to use to retrieve location values. This field must contain POINT or POLYGON definitions in WKT format. You must also define this field in the <code>fieldsInfo</code> configuration object. <code>latitudeField</code> (string) and <code>longitudeField</code> (string). The name of the field to use to retrieve latitude and longitude values, respectively. You must also define these fields in the <code>fieldsInfo</code> configuration object. Each location field object in the array also contains the following properties: <ul style="list-style-type: none"> <code>displayName</code> (string). The name of the location set. <code>iconName</code> (string). The name of the icon to use for this location set. <code>iconColor</code> (string). The color to use for the icon.

Property	Type	Description
		<ul style="list-style-type: none"> <code>markerColor</code> (string). The color to use for the location markers on the map visualization. This property accepts the values red, orange, green, blue, purple, darkred, darkblue, darkgreen, darkpurple, cadetblue, lightred, beige, lightgreen, lightblue, pink, white, lightgray, gray, and black.

For each object in your `locationFields` array, Find displays a set of location markers on your map visualization. For example, the following map configuration configures two sets of location fields to use in the map visualization. The map visualization includes two sets of markers, for `DefaultLocation` and `Geoindex`.

```
"map": {
  "enabled": false,
  "attribution": null,
  "initialLocation": {
    "latitude": 51.5074,
    "longitude": 0.1278
  },
  "tileUrlTemplate": null,
  "resultsStep": 2500,
  "locationFields" : [
    {
      "displayName" : "DefaultLocation",
      "latitudeField" : "latitude",
      "longitudeField" : "longitude",
      "iconName" : null,
      "iconColor" : null,
      "markerColor" : null
    }, {
      "displayName" : "Geoindex",
      "geoindexField" : "geounified",
      "iconName" : "hp-pin",
      "iconColor" : "blue",
      "markerColor" : "orange"
    }
  ]
}
```

Where `latitude`, `longitude`, `,` and `geounified` are fields defined in the `fieldsInfo` configuration:

```
"fieldsInfo": {
  "latitude": {
    "names": [
      "NODE_PLACE/LAT",
      "LAT"
    ],
    "type": "NUMBER",
    "advanced": true
  },
}
```

```

"longitude": {
  "names": [
    "NODE_PLACE/LON",
    "LON"
  ],
  "type": "NUMBER",
  "advanced": true
},
"geounified" : {
  "names" : [ "GEOUNIFIED" ]
  "type" : "geoindex",
  "advanced" : true,
}
}

```

In this case, the GEOUNIFIED field must contain POINT and POLYGON definitions in WKT format. To optimize performance, use an IDOL field with the `GeospatialType` field property set to `unified`. For more information, refer to the *IDOL Server Reference*.

TIP: If you want to use multiple location fields in your map visualization, but you want only one set of location markers, you can update the `fieldsInfo` configuration to add the new fields without adding a new `locationFields` option to the map configuration. For example:

```

"fieldsInfo": {
  "latitude": {
    "names": [
      "NODE_PLACE/LAT",
      "LAT",
      "OG_LATITUDE"
    ],
    "type": "NUMBER",
    "advanced": true
  },
  "longitude": {
    "names": [
      "NODE_PLACE/LON",
      "LON",
      "OG_LONGITUDE"
    ],
    "type": "NUMBER",
    "advanced": true
  }
}

```

However, you cannot use this method to combine unified geoindex fields with split latitude and longitude fields.

For more information about `fieldsInfo` configuration, see [Configure User-Friendly Names for Fields and Values, on page 34](#).

Configure the Trending Visualizer

The Trending visualization displays a chart of document rate against time for the values in a particular field, to show how particular topics change in popularity. The document rate is the number of documents added in the specified time unit (second, minute, hour, day, or year, as labeled on the chart). The appropriate time unit is chosen according to the document rates in your data.

You can configure the date field to use to specify the date and time for your documents, and you can set the number of field values and date values to display on the chart.

Configure the Date Field

The Trending visualizer uses the value of the specified date field as the document date when it creates the chart. By default, Find uses the `AUTN_DATE` field as the date field, but you can modify this field in the `config.json` configuration file.

To configure the date field to use for the Trending visualizer

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find the `trending` section, or create one if it does not exist.
4. Set the `dateField` property to the name of the field to use. You can use any date field, as long as it was configured as a date field in your IDOL Content component before you indexed the data.

For example:

```
"trending" : {  
  "dateField" : "DOCUMENTDATE",  
  "numberOfValues": 10,  
  "defaultNumberOfBuckets": 20  
}
```

5. Save the file, and restart Find to apply your configuration changes.

Configure the Number of Field Values to Display

By default, the Trending visualizer displays the trends for ten values in the selected parametric field. You can modify this value in the `config.json` configuration file.

To configure the number of values to display in the Trending visualizer

1. Go to the Find home directory.
2. Open `config.json` in a text editor.

3. Find the trending section, or create one if it does not exist.
4. Set the `numberOfValues` property to the number of values to include in the visualization.

For example:

```
"trending" : {
  "dateField" : "DOCUMENTDATE",
  "numberOfValues": 5,
  "defaultNumberOfBuckets": 20
}
```

NOTE: In the visualization, each value has a line with a different color. There are ten possible colors, so if you set `numberOfValues` higher than ten, some values share a color.

5. Save the file, and restart Find to apply your configuration changes.

Configure the Number of Date Ranges to Use

The Trending visualizer displays document rate against time. It selects date values from your documents and organizes the available dates into the specified number of ranges.

By default, the visualizer divides the total range of dates into 20 equal-sized buckets. Users can modify this number by using a slider, which by default allows them to change the number of buckets between three and 100.

You can modify the default number of buckets to display in the `config.json` configuration file, and the maximum and minimum values to add on the slider.

To configure the number of values to display in the Trending visualizer

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find the trending section, or create one if it does not exist.
4. Set the `defaultNumberOfBuckets` property to the number of date ranges to include in the visualization. Set `minNumberOfBuckets` and `maxNumberOfBuckets` to the minimum and maximum values to use in the UI slider, respectively.

For example:

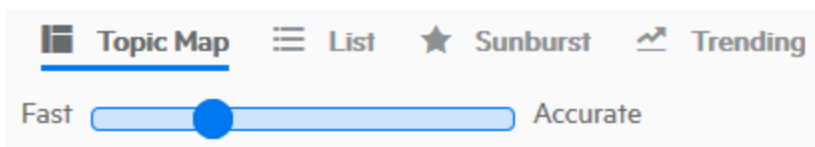
```
"trending" : {
  "dateField" : "DOCUMENTDATE",
  "numberOfValues": 5,
  "defaultNumberOfBuckets": 30,
  "minNumberOfBuckets": 5,
  "maxNumberOfBuckets": 40
}
```

5. Save the file, and restart Find to apply your configuration changes.

Change the Maximum Number of Documents Used to Calculate a Topic Map

The topic map shows a collection of related concepts that are related to the results generated by a search. The choice of related concepts is affected by the number of result documents that are used to generate them. A larger number of documents provides a more accurate reflection of the full result set, but a smaller number is faster to calculate.

The user can control this by using the fast-accurate slider in the topic map view.



The slider enables the user to choose any number of documents for the calculations, between 50 at the fast end, and a configurable maximum value at the accurate end. By default, the maximum value is 1000.

To change the maximum number of documents to use

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Set `topicMapMaxResults` to the maximum number of results to use to generate the topic map. For example:


```
"topicMapMaxResults": 500
```

 This example sets the range to be 50 (fast) to 500 (accurate).
4. Restart Find to apply your configuration changes.

Change the Maximum Number of Documents to Use to Compare Searches

The Compare option allows you to compare two saved searches. By default, Find compares all the available results for both searches, which provides the most accurate comparison. For very large data sets, complete comparisons for large queries might be quite slow. In this case, you can improve the performance by reducing the maximum number of results to use in the comparison.

To change the maximum number of documents to use

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Add the `comparisonStoreStateMaxResults` property, and set it to the maximum number of results to use in the comparison. For example:

```
"comparisonStoreStateMaxResults": 100000
```

This example compares the first 100000 results.
4. Restart Find to apply your configuration changes.

Change the Maximum Number of Documents to Export

The Export Results to CSV option allows you to export the documents in a search results list to a file. By default, Find does not limit the number of documents to export. For searches with a very large number of results, the export might be quite slow. In this case, you can improve the performance by reducing the maximum number of results to export.

TIP: You can also change the columns that Find exports in the CSV. See [Configure Fields to Export, on page 37](#).

To change the maximum number of documents to export

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Add the `exportStoreStateMaxResults` property, and set it to the maximum number of results to include in the export. For example:

```
"exportStoreStateMaxResults": 10000
```

This example exports only the first 10000 results.
4. Restart Find to apply your configuration changes.

Change the Result Tabs

Find can display several different result views and visualizations for your search results. These views are available as tabs in the Find. You can modify the order that these tabs are displayed, for different roles.

To change the order of the results tabs

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `uiCustomization` section, in the `options` object, find or add the `resultViewOrder` property.
4. In the `resultViewOrder` object, add the `user` and `bi` properties to define the behavior for each user role. For each type, set the property to an array of tabs. Find displays the specified tabs in the specified order for users with that role.

The available tabs are:

topic-map	The topic map visualizer, which displays a collection of related concepts that are related to the results generated by a search. See Change the Maximum Number of Documents Used to Calculate a Topic Map, on page 50 .
list	The results list view, which lists the search results.
sunburst	The sunburst visualizer, which shows the parametric values in particular fields for the results of the search.
trending	The Trending visualizer, which displays a chart of document rate against time for the values in a particular field, to show how particular topics change in popularity. See Configure the Trending Visualizer, on page 48
table	The table view, which shows the parametric value counts in a table.
map	The map view, which displays a map with pins to show search results that have geographical information. See Configure Map Visualizations, on page 29 .
recommendation	The recommendation tab, which shows search results that relate to the profiles for the current user. See Use Profiles to Provide User-Specific Content, on page 54 .
related-users	The related users tab, which shows users who are interested in topics related to the current search, and users designated as experts on topics related to the current search. See Configure the Related Users Tab, on page 56 .

For example:

```
"uiCustomization": {
  "options": {
    "resultViewOrder": {
      "user": [ "list", "topic-map" ],
      "bi": [ "topic-map", "list", "sunburst", "trending", "table", "map",
"recommendation", "related-users" ]
    },
  },
}
```

```

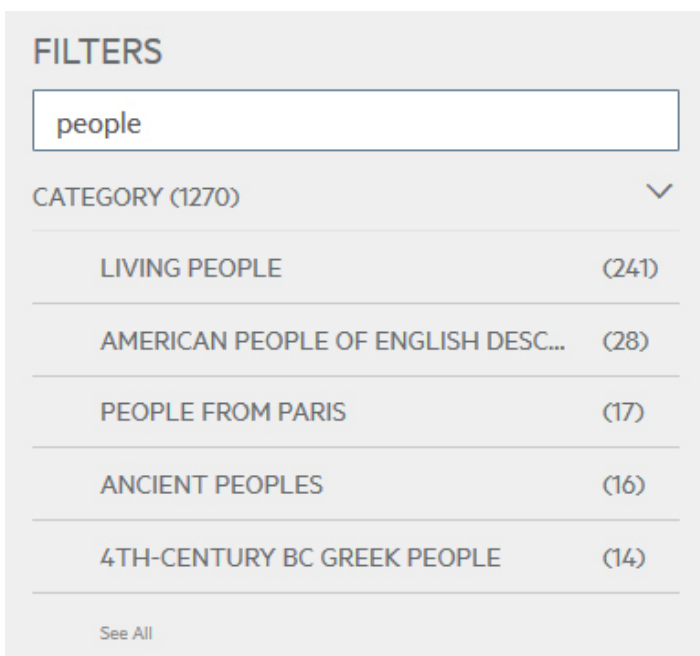
    "enableMetaFilter": {
      "user": false,
      "bi": true
    }
  }
}

```

5. Restart Find to apply your configuration changes.

Enable or Disable the Filter Search Bar

The filter search bar is a search bar that enables users to search through the filters in the left-hand panel in the Find user interface.



By default, this feature is present only for users with the FindBI user role. You can enable or disable the filter search bar for either user role.

To enable or disable the filter search bar

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `enableMetaFilter` section, set a user role to `false` to disable the filter search bar, or `true` to enable it. For example:

```

"uiCustomization": {
  "options": {
    "enableMetaFilter": {

```

```

        "user": false,
        "bi": true
    },
    "enableRelatedConcepts": {
        "user": true,
        "bi": false
    }
},

```

Enable or Disable the Related Concepts Panel

The related concepts panel is shown on the right of the Find search page. By default, it is enabled for users without the FindBI user role, and disabled for those with the FindBI user role. You can disable or enable related concepts for either user role.

To enable or disable the related concepts panel

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `enableRelatedConcepts` section, set a user role to `true` to enable the display of the related concepts panel, or `false` to disable it. For example:

```

"uiCustomization": {
  "options": {
    "enableRelatedConcepts": {
      "user": true,
      "bi": false
    },
    "enableMetaFilter": {
      "user": false,
      "bi": true
    }
  }
}

```

4. Restart Find to apply your configuration changes.

Use Profiles to Provide User-Specific Content

You can configure Find to save and update profiles for your users in the IDOL Community component. These profiles store information about the kinds of documents that the user views in Find. You can use this information to:

- provide user-specific recommendations based on the profiles. For this option, you must enable profiles, and enable the My Recommendations tab in Find, which displays documents that are relevant to a user's profiles. See [Change the Result Tabs, on page 51](#).
- sort documents in a query result list according to their relevance to the user's profile. For this option, you must use Query Manipulation Server (QMS), and enable intent-based ranking.

You configure user profiles in the Find `config.json` configuration file, by adding a profile object to the `uiCustomization` section.

To configure user profiles

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find the `uiCustomization` section, and find or create the `profile` object.
4. In the profile object, add or update the settings for your user profiles. The following table describes the available properties. To enable user profiles in Find you must set `updateProfileOnView` to **true**.

<code>intentBasedRanking</code>	(Boolean) A Boolean value that controls whether to enable intent-based ranking. This option has an effect only if you use QMS. Set <code>intentBasedRanking</code> to true to display a checkbox in the Find UI that allows users to sort results with intent-based ranking. When the user selects this option, Find uses QMS to order the results according to user preferences. The default value is false .
<code>highlightTerms</code>	(Boolean) A Boolean value that specifies whether to highlight terms that occur in a user's profile in the results that Find includes on the My Recommendations tab. Set <code>highlightTerms</code> to false if you do not want to highlight the terms that are associated with the user profiles in the recommended documents. The default value is true . This option has an effect only if you configure the My Recommendations tab. See Change the Result Tabs, on page 51 .
<code>maxProfiles</code>	(Integer) The maximum number of profiles to use to get results for the My Recommendations tab (the IDOL Community component stores different user interests as multiple profiles). The default value is 3 . This option has an effect only if you configure the My Recommendations tab. See Change the Result Tabs, on page 51 .
<code>maxResultsPerProfile</code>	(Integer) The maximum number of results for each user profile to show on the My Recommendations tab. The default value is 2 . If a document returns as a result for more than one profile, Find displays it only once. This option has an effect only if you configure the My Recommendations tab. See Change the Result Tabs, on page 51 .

maxTerms	(Integer) The number of terms from a profile to use in profile searches. The IDOL Community component builds profiles from a weighted list of terms that occur in documents that the user views, and Find uses this term list to find related documents to recommend. The default value is 30 .
updateProfileOnView	(Boolean) A Boolean value that specifies whether to update the profiles for a user when the user opens a document for viewing. Set updateProfileOnView to true to enable user profiles. The default value is false .

For example:

```
"uiCustomization": {
  "profile": {
    "intentBasedRanking": true,
    "highlightTerms": true,
    "maxProfiles": 3,
    "maxResultsPerProfile": 2,
    "maxTerms": 30,
    "updateProfileOnView": true
  }
}
```

5. Save the file, and then restart Find to apply your configuration changes.

Configure the Related Users Tab

The Related Users tab shows users who are interested in topics related to the current search, and users designated as experts on topics related to the current search.

This feature finds related users by searching the user profiles in the IDOL Agentstore component for profiles that match the current search. To use the related users tab, you must configure the IDOL Agentstore component on the Find settings page. In general, you use the IDOL Agentstore component that your Community component uses (see [Required IDOL Components, on page 11](#)).

NOTE: You configure the user profiles in the Community component. For more information about how to set up profiles in Community, refer to the *IDOL Server Administration Guide*, and the *Community Component Reference*.

You can also configure Find to update user profiles when users access a document. See [Use Profiles to Provide User-Specific Content, on page 54](#).

To display the Related Users tab in Find, you must add the related-users option to the resultViewOrder configuration. See [Change the Result Tabs, on page 51](#).

The following procedure describes how to change the settings for the related users tab.

To configure the related users tab

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find or create a `users` section.
4. In the `users` section, find or create a `relatedUsers` object.
5. In the `relatedUsers` object, set `enabled` to `true` to activate the related users tab.
6. You can add an `interests` and an `expertise` object to configure the settings to display for interested users and experts. These objects can include the following options:

<code>agentStoreProfilesDatabase</code>	The database in the IDOL Agentstore component that contains the profiles of the users that you want to use for this part of the related users tab.
<code>namedArea</code>	The named area listed in the user profiles that you want to use for this part of the related users tab.
<code>userDetailsFields</code>	An array of the fields that you want to display for each user in this part of the related users tab. Each array item is an object that contains the <code>name</code> element, set to the name of the field to display.

For example:

```
"users": {
  "relatedUsers": {
    "enabled": true,
    "interests": {
      "agentStoreProfilesDatabase": "profile",
      "namedArea": "default",
      "userDetailsFields": [
        { "name": "phone" },
        { "name": "department" }
      ]
    },
    "expertise": {
      "agentStoreProfilesDatabase": "profile",
      "namedArea": "experts",
      "userDetailsFields": [
        { "name": "phone" },
        { "name": "department" },
        { "name": "position" }
      ]
    }
  }
}
```

7. Save the file, and then restart Find to apply your configuration changes.

Enable Direct Viewing of Particular URLs

The default Find document preview uses the IDOL View component to render most files and Web pages, and uses a sandbox on the iframe to prevent javascript execution. In some cases, you might have documents with reference URLs that you want to view directly instead, such as direct video links and posts from social media websites.

In this case, you can add a regular expression to represent allowed URLs to the Find preview white list, and provide a mapping to the HTML template that you use to generate the tag.

You can also use this option to convert a normal Youtube video link to an embed link for previewing, because the normal link has options that prevent viewing in iframes.

To enable direct viewing for URLs

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find the `uiCustomization` section, and add or modify the `previewWhitelistUrls` property. This property contains a list of mappings where the property is a URL regular expression to identify the URLs to view directly, and the value is the HTML template to use to generate the tag that displays the result (typically an iframe).

For example:

```
"uiCustomization": {
  "previewWhitelistUrls": {
    "^((https?://)?www\\.youtube(-nocookie)?\\.com/embed/.*)" : "<iframe
class=\"preview-document-frame\" allow=\"autoplay; encrypted-media\"
allowfullscreen src=\"<%-reference%>\">",
    "^((https?://)?www\\.facebook\\.com/plugins/.*)" : "<iframe
class=\"preview-document-frame\" allow=\"autoplay; encrypted-media\"
allowfullscreen src=\"<%-reference%>\">",
    "^((https?://)?video\\.xx\\.fbcdn\\.net/.*)" : "<iframe class=\"preview-
document-frame\" allow=\"autoplay; encrypted-media\" allowfullscreen src=\"<%-
reference%>\">",
    "^((https?:\\/\\/)?www\\.youtube\\.com\\/watch(?:[?&]v=([^&?]+)(.*))":
"<iframe class=\"preview-document-frame\" allow=\"autoplay; encrypted-media\"
allowfullscreen src=\"https://www.youtube-nocookie.com/embed/<%-match[3]%>?<%-
match[2]%><%-match[4]%>\">"
  }
}
```

NOTE: Find adds variable values to the HTML template, based on the document. For example, it can provide:

- `match`. The regular expression match.
- `reference`. The document reference.
- `title`. The document title.
- `fields`. A list of document fields, each with an `id` property (from `fieldsInfo` in `config.json`), and a `values` array.

4. Restart Find to apply your configuration changes.

Open a Shared Search as a New Query

When a user opens a shared search that they did not create, for example by clicking on a dashboard, by default Find opens the shared search directly if they have permission to edit it, or in read-only mode if they do not. The user can create a new query from the read-only one by using the **Open as Query** option.

You can configure Find to automatically always open a new query for a shared search.

To configure Find to open shared searches as a new query by default

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `uiCustomization` section, add the `openSharedDashboardQueryAsNewSearch` property, and set it to `true` to automatically open a shared search as a new query. For example:

```
"uiCustomization": {
  "openSharedDashboardQueryAsNewSearch": true
}
```

Customize Error Messages

When an error occurs in Find, the application displays an error message describing the nature of the problem. If the error is of a nature such that a user cannot solve it, a message prompting the user to contact support is shown.

To customize error messages

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. To add your relevant support contact details, add an `errorCallSupportString` option to the `uiCustomization` section. For example:

```
"uiCustomization": {
  "errorCallSupportString": "Contact Support on 01 234 56."
}
```

4. Restart Find to apply your configuration changes.

Find uses the new message instead of the default message.

Exclude Databases from Queries

In the default configuration, Find sends queries to all your IDOL databases. You can change the default database selection by excluding some databases in your Find configuration file (`config.json`). In this case, the databases are not included in a query by default, but users can explicitly select the databases if they want to search them.

To exclude certain databases from queries by default

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `uiCustomization` section, set the `defaultDeselectedDatabases` property to an array of databases that you want to exclude from the list of databases that Find queries by default.

For example:

```
"uiCustomization": {
  "defaultDeselectedDatabases": [
    "multilingual"
  ]
}
```

4. Restart Find to apply your configuration changes.

Configure Entity Search

Entity searches allow users to run an additional entity search against a special IDOL Content component.

When you configure entity search, users can select text in the Find user interface and it opens a dialog box with search results from the entity Content. You can also configure an Answer Server, in which case the dialog box includes a question input field.

You configure entity search by adding the `entitySearch` section to your `config.json` configuration file, with details of the search components to use, and any custom fields.

To configure entity search

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find or add the `entitySearch` section.
4. Set the `enabled` property to **true** to enable entity search.
5. Add a `server` property to set the details for your entity search component. This property is an object, which accepts the subproperties described in the following table. In most cases, you must change at least `host` and `port` to the appropriate values for your IDOL Content component.

<code>host</code>	(String) The host name or IP address of the component to use for entity search. The default value is <code>localhost</code> .
<code>port</code>	(Integer) The port of the component to use for entity search. The default value is <code>9050</code> .
<code>protocol</code>	(String) The protocol to use to connect to the IDOL Content component. The default value is <code>HTTP</code> .

6. To enable an Answer Server to use for entity search, add an `answerServer` property. This property is an object.

To enable Answer Server, set the `enabled` subproperty to **true** and add a `server` subproperty to set the details for your entity search Answer Server.

This server object contains the same subproperties as for the main entity search component (see [Step 5](#)), with the following default values:

```
"server": {
  "protocol": "HTTP",
  "host": "localhost",
  "port": 7700
}
```

In most cases, you must change at least `host` and `port` to the appropriate values for your Answer Server.

In the `answerServer` object, you can optionally also set `systemNames` to an array of Answer Server systems that you want to query. By default, Find uses all systems.

7. Set any additional optional parameters in the `entitySearch` object. The following table lists the available parameters.

<code>absWeight</code>	(Boolean) Set to true to use the <code>AbsWeight</code> parameter in the entity search, to return result weighting as absolute values rather than percentages. The default value is false . For more information about <code>AbsWeight</code> , refer to the <i>IDOL Server Reference</i> .
------------------------	---

agentBooleanField	(String) A field in your entity search index that contains AgentBoolean expressions. For more information, refer to the <i>IDOL Server Reference</i> .
combine	(String) The combine option to use in queries to the entity search Content. For more information, refer to the <i>IDOL Server Reference</i> .
databaseChoices	<p>(Object) The database options to provide to users to control the databases that Find searches when a user highlights text for entity search. The databaseChoices object contains a property for each option that you want to display in the database group list. The key (the name of the property) is the display name to use in Find. Set the property to an array of the IDOL databases to use for this option.</p> <p>For example, "Places" : ["Places", "PlacesExtended"] creates a Places database option in the Find user interface and maps it to the Places and PlacesExtended IDOL databases.</p> <div style="border: 1px solid #ccc; padding: 5px; background-color: #f9f9f9;"> <p>TIP: In your HTML, you can control the database group to use when a user highlights the text in a particular HTML element, by using the data-entity-search-database-group HTML attribute. This attribute sets a default database group to use for a particular element.</p> <p>For example, if you have an element that displays place names, you might set the attribute data-entity-search-database-group="Places". If the user has selected a database group, their explicit selection takes precedence.</p> <p>You can use this option in a custom template (see Configure Templates, on page 94).</p> </div>
databaseChoicesVisible	(Boolean) Whether to display a menu in the user interface to allow users to explicitly choose a database group.
idolPrintFields	(Array, strings) A list of fields from your IDOL documents to display in the entity search results.

8. Save the file, and then restart Find to apply your configuration changes.

For example:

```
"entitySearch" : {
  "server" : {
    "protocol" : "HTTP",
    "host" : "entitycontent.example.com",
    "port" : 9000
  },
  "enabled" : true,
  "agentBooleanField" : "AGENTBOOL",
```

```

    "combine" : "FieldCheck",
    "idolPrintFields" : [ "WIKIPEDIA_ENG", "WIKIPEDIA_IMAGE", "PERSON_DATE_OF_
BIRTH", "PERSON_DATE_OF_DEATH", "PERSON_PROFESSION", "WIKIPEDIA_IMAGE", "LAT",
"LON", "PLACE_COUNTRY_CODE", "PLACE_REGION1", "PLACE_POPULATION", "PLACE_TIMEZONE",
"WIKIPEDIA_IMAGE", "URL_HOMEPAGE", "COMPANY_GOOGLE" ],
    "databaseChoices" : {
        "All": ["*"],
        "People" : ["People"],
        "Companies" : ["Companies"],
        "Places" : ["Places", "PlacesExtended"]
    },
    "databaseChoicesVisible": true,
    "answerServer": {
        "server": {
            "protocol": "HTTP",
            "host": "10.2.21.210",
            "port": 16000
        },
        "systemNames": ["FactBank", "PassageExtractor"],
        "enabled": true
    }
}
}

```

After you configure entity search, you might also want to configure a custom template to display entity search results. See [Configure Templates, on page 94](#).

Modify the Length of a Document Summary

Find generates document summaries for the results that it returns in queries to give users a quick idea of what each document is about. By default, Find uses a maximum summary length of 250 characters (where a character is a single byte). This value is generally suitable for producing summaries for English and most European languages.

You might need to increase the summary length if you have documents in multibyte languages, such as Chinese, Japanese, Korean, and Thai.

For example, if you want to generate summaries for Thai text, you might increase the maximum summary length to 750, because each Thai text character corresponds to three UTF-8 bytes.

To change the document summary length

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find or add the `documentSummaryMaxLength` property, and set it to the maximum length to use. This value must be an integer.

```
"documentSummaryMaxLength": 750
```

4. Save the file, and then restart Find to apply your configuration changes.

Change the Highlight Color

When you run a search in the Find UI, by default Find highlights the search terms in your results in bold. You can modify Find to highlight the search terms in different text color, or with a different background color, by using the `styles.json` configuration.

To change the Find highlighting color

1. Go to the Find home directory.
2. In the customization folder, open `styles.json` in a text editor.
3. Add one or both of the following properties to the JSON definition.

Property	Type	Description
<code>termHighlightColor</code>	String	The color to use as the text color for highlighted search terms. You can specify the colors as six-figure hex values (for example <code>#112233</code>), or text color values (for example blue). By default, Find does not change the text color.
<code>termHighlightBackground</code>	String	The color to use as the background color for highlighted search terms. You can specify the colors as six-figure hex values (for example <code>#112233</code>), or text color values (for example blue). By default, Find does not change the background color.

For example:

```
{
  "termHighlightColor": "yellow",
  "termHighlightBackground": "purple"
}
```

4. Save the file, and then restart Find to apply your configuration changes.

TIP: If you belong to the **FindAdmin** role, you can reload the styles configuration to make any configuration changes available to your users without restarting Find.

To reload the template configuration, you must send the following API call to Find directly, by typing the URL into your Web browser address bar. You must be logged into Find as a user with the **FindAdmin** role in the same Web browser, because Find uses the session cookie to authorize the action.

```
http://FindURL/api/admin/customization/config/reload
```


Where *FindURL* is the URL of your Find server.

This option also reloads any other customization configurations (for example, dashboards).

Configure List View

The List View displays results using infinite scrolling. It is possible to change the number of results that load at once, to optimize performance. The default value is 30.

To change the number of list view results that load at once

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. In the `uiCustomization` section, find or add the `listViewPagingSize` property.
4. Change the value of `listViewPagingSize` to an appropriate value.
5. Save the file, and then restart Find to apply your configuration changes.

Configure Combine Method for Query

When querying, Find can combine results in different ways, for example to ensure that each document returns a single result even when the index contains multiple sections for the same document. The default method for combining results is `simple`. This can be changed to "" (empty string), to disable combining, or another Combine value. Refer to the *IDOL Server Reference* for details.

To change the combine method

1. Go to the Find home directory.
2. Open `config.json` in a text editor.
3. Find or add the `combineMethod` property.
4. Change the value of `combineMethod` to an appropriate value. For example:

```
"combineMethod": "Simple+FieldCheck"
```
5. Save the file, and then restart Find to apply your configuration changes.

Chapter 7: Configure Dashboards

This section describes how to set up and configure dashboards.

- [Find Dashboards](#) 66
- [Dashboard Configuration](#) 67
- [Dashboard Grid Size](#) 69
- [Widgets](#) 70
- [Widget Configuration](#) 71
- [Dashboard Export Notes](#) 83
- [Example Dashboard Configuration](#) 83

Find Dashboards

Dashboards in Find are fully configurable UI pages, which you can use to set up and display the content, search results, and visualizations that you refer to most regularly.

Each dashboard contains one or more *widgets*, each of which displays a particular set of content, and can be backed by an Find saved search. The standard set of widgets provide a variety of visualizations for your saved searches, as well as static content, images, or videos. For a full list of available widgets, see [Widgets, on page 70](#).

The widgets that use a saved search display the latest available results for a particular visualization or results list. The widgets are not interactive. However, you can click a particular widget to open the saved search that the widget displays, to view and explore the information in more detail.

You configure dashboards by modifying the `dashboards.json` configuration file, in the `customizations` directory of your Find installation home directory.

Dashboards are available only to users with the `FindBI` user role. You can also optionally restrict individual dashboards to a specific set of roles.

The list of available dashboards is displayed in the **Dashboards** section of the Find navigation side bar.

You can also access the dashboard directly by using a link of the form

`FindURL/public/dashboards/DashboardName`, where `FindURL` is the base URL for your Find user interface, and `DashboardName` is the configured name of the dashboard that you want to display.

The dashboards have a full screen option. In this case, the session continues indefinitely without logging the user out of Find, unless you are using IDOL document security (in which case the session ends when the user security token expires).

Users can also export dashboards to `.pptx` presentation format, either as a single slide or with each widget on a separate slide.

NOTE: There are some restrictions for export on certain types of widget. See [Dashboard Export Notes, on page 83](#).

Dashboard Configuration

You create and configure dashboards by modifying the `dashboards.json` configuration file, in the `customization` directory in your Find installation home directory.

This configuration file contains the `dashboards` object, which is an array of dashboard configuration objects. To add a dashboard, you add an object to this array.

In the Find user interface, the **Dashboards** section in the navigation sidebar lists your dashboards in the same order that you list them in the configuration file.

When you add a dashboard, you can configure the name and the number of grid squares to divide your dashboard into, as well as how often to update the contents of the widgets.

TIP: If you belong to the **FindAdmin** role, you can reload the dashboard configuration to make any configuration changes available to your users without restarting Find.

To reload the dashboards, you must send the following API call to Find directly, by typing the URL into your Web browser address bar. You must be logged into Find as a user with the **FindAdmin** role in the same Web browser, because Find uses the session cookie to authorize the action.

```
http://FindURL/api/admin/customization/config/reload
```

Where *FindURL* is the URL of your Find server.

This option also reloads any other customization configurations (for example, applications).

The following table lists the configuration properties that you can use for the dashboards.

Property	Required	Type	Description
<code>dashboardName</code>	Yes	String	The name to use for the dashboard. This name is displayed in the Dashboards navigation section.
<code>enabled</code>	Yes	Boolean	Set to true to enable the dashboard and display it in the Dashboards navigation section. Set to false to hide the dashboard.
<code>width</code>	Yes	Integer	The width of the dashboard grid, in grid squares (where a widget takes up a minimum of one grid square). For more information, see Dashboard Grid Size, on page 69 .
<code>height</code>	Yes	Integer	The height of the dashboard grid, in grid squares (where a widget takes up a minimum of one grid square). For more information, see Dashboard Grid Size, on page 69 .
<code>updateInterval</code>	Yes	Integer	The time (in seconds) to wait between each refresh

Property	Required	Type	Description
			of the widgets in this dashboard. This parameter affects only widgets that reference a query saved search. It does not apply to static widgets and widgets that reference a snapshot.
widgets	Yes	Object Array	An array of objects that define the widgets to include in the dashboard, their positions and sizes, and the individual widget configuration. For details of the properties to use for widget configuration, see Widget Configuration, on page 71 .
displayWidgetNames	No	String Enum	A string that determines whether to display the names of the widgets. Use one of the following options: <ul style="list-style-type: none"> • always. Always display names, if provided in the widget configuration. • onhover. Display names only when a user mouses over the widget. • never. Never display names, even if they are provided in the widget configuration. This is the default value. <p>You can override this parameter for individual widgets by using the <code>displayWidgetName</code> option in the widget configuration. See Widget Configuration, on page 71.</p>
roles	No	String Array	An array of strings that specify the role names of roles that can access the dashboard. Users can see the dashboard only if they belong to at least one of the roles that you specify. If you do not set the roles property, the dashboard is accessible to all users.

The following example shows a simple configuration for one dashboard that contains a single widget:

```
{
  "dashboards": [
    {
      "dashboardName": "Static Content Dashboard",
      "enabled": true,
      "width": 4,
      "height": 4,
      "updateInterval": 1000,
      "roles": ["CustomRole"]
      "widgets": [
        {
          "name": "Static Image",
```

```
        "type": "staticImageWidget",
        "x": 1,
        "y": 1,
        "width": 2,
        "height": 2,
        "widgetSettings": {
            "url": "http://example.com/image.png"
        }
    }
]
}
```

Dashboard Grid Size

You define the size of the dashboard by defining a number of grid squares that the dashboard can contain. Each widget takes up at least one grid square, although you can also configure it to use more space.

You cannot define the absolute size of a dashboard. The grid scales with the size of the dashboard window.

You can size and place your widgets anywhere on the grid, and define the size of each widget as a number of grid squares in width and height.

For example, if you define your grid to be four width by four height, you have sixteen grid squares, which you can use in several ways, such as:

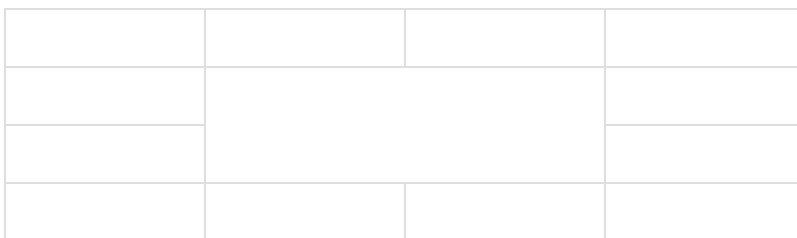
- Sixteen one-by-one widgets:

- Four two-by-two widgets:

- One two-by-four widget, and two two-by-two widgets:



- One two-by-two widget, placed centrally, surrounded by one-by-one widgets:



Widgets

There are several standard widgets available that you can use in your dashboards.

The following widgets display results or visualizations from a saved search:

- **Topic Map.** Displays the topic map visualization for the specified saved search.
- **Results List.** Displays the result list for the specified saved search.
- **Sunburst.** Displays the sunburst visualization for the specified saved search.
- **Trending.** Displays the trending visualization for the specified saved search.
- **Map.** Displays the map visualization for the specified saved search.
- **Video Panel.** Displays a video result from the specified saved search.

Clicking on one of these widgets opens the appropriate saved search page. When the current user owns the saved search page, it opens as normal, and the user can modify the search. If the current user does not own the saved search page, the page displays the results and visualizations, but the user cannot modify the search settings.

The following widgets display information that does not relate to a specific saved search:

- **Static Content.** Displays some static HTML content that you provide.
- **Static Image.** Displays an image that you reference.
- **Current Time/Date.** Displays the current date and time.
- **Time Last Refreshed.** Displays the time that the widgets on the dashboard were last refreshed, and the time that the next update is scheduled.

Widget Configuration

For each widget, you must specify the name, and the size and position of the widget in the dashboard grid.

The following table describes the parameters for all widgets. All options are required unless otherwise specified.

Property	Description	Type
name	The name of the widget.	String
type	The type of widget. See the individual widget sections for the value to use.	String Enum
x	The position of the left side of the widget, from the left side of the dashboard (the left side is 0). Widgets align to grid squares. You must set the position so that the whole widget appears within the dashboard width.	Integer
y	The position of the top of the widget, from the top of the dashboard (the top is 0). Widgets align to grid squares. You must set the position so that the whole widget appears within the dashboard height.	Integer
width	The width of the widget, in grid squares. This value must be less than the total width of the dashboard, and less than the combined width of the widgets on the same row of the dashboard.	Integer
height	The height of the widget, in grid squares. This value must be less than the total height of the dashboard, and less than the combined height of the widgets in the same column in the dashboard.	Integer
cssClass	Optional. A CSS class to use for the widget.	String
displayWidgetName	Optional. A string that determines whether to display the name of the widget. Use one of the following options: <ul style="list-style-type: none"> • always. Always display the name for this widget, if it has one. • onhover. Display the name only when a user mouses over the widget. • never. Never display the name, even if it has one in the widget configuration. <p>This option overrides the <code>displayWidgetNames</code> option in the dashboard configuration, which has a default value of never. See Dashboard Configuration, on page 67.</p>	String Enum

For more information about the dashboard grid, see [Dashboard Grid Size, on page 69](#).

For widgets that require a saved search, you must also specify the ID and type of the saved search. You add the saved search by using the `datasource` property, which is a JSON object with the following properties:

<code>source</code>	The type of data source to use for the widget. For a saved search, set this option to <code>SavedSearch</code> .
<code>config</code>	A JSON object that defines the configuration for the data source. For the <code>SavedSearch</code> source, this object has the following required subproperties: <ul style="list-style-type: none"> <code>id</code> (string). The ID of the saved search to use for this widget. You find the ID by opening the saved search tab in the Find user interface, and checking the URL. In the URL, the saved search type and ID appear after <code>tab/</code>, as <code>QUERY:ID</code> or <code>SNAPSHOT:ID</code>, where ID is a number. <code>type</code> (string enum). The type of saved search: QUERY or SNAPSHOT.

The following example shows the basic widget configuration.

```
"widgets": [
  {
    "name": "TopicMap",
    "type": "TopicMapWidget",
    "x": 1,
    "y": 1,
    "width": 2,
    "height": 2,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "type": "QUERY",
        "id": "1234"
      }
    },
    "widgetSettings": {
      "maxResults": 1000
    }
  }
]
```

Each widget has some specific configuration details, which you specify in the `widgetSettings` object in the dashboard configuration. The available parameters are described in the following sections.

Topic Map Widget

For the Topic Map widget, set `type` to **TopicMapWidget**.

This widget type requires a saved search. You must set the `source` property to **SavedSearch** in the widget configuration.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Description	Default
maxResults	No	The maximum number of results to retrieve from the saved search to form the topic map. Requesting more results generally gives a more accurate topic map, but the widget might load and refresh more slowly.	300

Example widget configuration:

```
{
  "name": "TopicMap",
  "type": "TopicMapWidget",
  "x": 0,
  "y": 0,
  "width": 1,
  "height": 1,
  "datasource": {
    "source": "SavedSearch",
    "config": {
      "type": "QUERY",
      "id": "1234"
    }
  },
  "widgetSettings": {
    "maxResults": 1000
  }
}
```

Results List Widget

For the Results List widget, set type to **ResultsListWidget**.

This widget type requires a saved search. You must set the source property to **SavedSearch** in the widget configuration.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Type	Description	Default
columnLayout	No	Boolean	Set to true to display results in columns instead of rows.	false
maxResults	No	Integer	The maximum number of results to include in the results list.	6
sort	No	String enum	The sort option to use to order the results. Micro Focus recommends that you use only date and relevance , which match the options	relevance

Property	Required	Type	Description	Default
			available in the Find user interface. However, you can use any sort method that is supported by the IDOL Content component. In this case, the result order might be different to the rest of your user interface. For details of the available sort options, refer to the <i>IDOL Content Component Reference</i> .	

Example widget configuration:

```
{
  "name": "List",
  "type": "ResultsListWidget",
  "x": 1,
  "y": 1,
  "width": 2,
  "height": 2,
  "datasource": {
    "source": "SavedSearch",
    "config": {
      "type": "QUERY",
      "id": "1234"
    }
  },
  "widgetSettings": {
    "maxResults": 10
  }
}
```

Sunburst Widget

For the Sunburst widget, set type to **SunburstWidget**.

This widget type requires a saved search. You must set the source property to **SavedSearch** in the widget configuration.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Type	Description	Default
<code>firstField</code>	Yes	String	The name of the field to display on the inner ring.	
<code>maxLegendEntries</code>	No	Integer	The maximum number of values to display in the legend, for each tier. If the search returns more than the specified number of values for the field, colors and legend entries are	5

Property	Required	Type	Description	Default
			assigned to the values with the largest contribution, and the remaining values are displayed in white.	
secondField	No	String	The name of the field to display on the outer ring. If you do not set this property, the widget displays only a single ring.	

Example widget configuration:

```
{
  "name": "Sunburst",
  "type": "SunburstWidget",
  "x": 2,
  "y": 2,
  "width": 1,
  "height": 1,
  "datasource": {
    "source": "SavedSearch",
    "config": {
      "type": "QUERY",
      "id": "1234"
    }
  },
  "widgetSettings": {
    "firstField": "category",
    "secondField": "person"
  }
}
```

Trending Widget

For the Trending widget, set type to **TrendingWidget**.

This widget type requires a saved search. You must set the source property to **SavedSearch** in the widget configuration.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Type	Description	Default
parametricField	Yes	String	The name of the field to display in the trending visualization.	
dateField	No	String	The name of the date field to use to find the date associated with particular values in the trending visualization.	AUTN_DATE

Property	Required	Type	Description	Default
numberOfBuckets	No	Integer	The number of points to include on the trending lines. Each point represents the document rate for a particular time range (bucket). The number of buckets controls how many buckets to split the full time range into.	20
maxValues	No	Integer	The maximum number of top values to display from the specified parametric field. If you define the values object for this widget, it overrides the maxValues setting.	10
maxDate	No	String	The maximum date to include in the visualization. Specify a date in the format YYYY-MM-DDT hh:mm:ssZ. This value becomes the maximum value on the x-axis. By default, the visualizer displays the maximum date that occurs in the documents with the specified parametric field.	unlimited
minDate	No	String	The minimum date to include in the visualization. Specify a date in the format YYYY-MM-DDT hh:mm:ssZ. This value becomes the minimum value on the x-axis. By default, the visualizer displays the minimum date that occurs in the documents with the specified parametric field.	unlimited
values	No	Object	A JSON object that specifies particular values that you want to display in the visualization. If you define values, the visualization includes only the specified values, regardless of maxValues. This object contains the following properties: <ul style="list-style-type: none"> name (string). Required. The field value to display in the visualization. color (string). Optional. The color to use for the trending line for this field value. You can use the values blue, light-blue, orange, pink, light-pink, green, light-green, red, purple, and yellow. If you do not specify a color, Find assigns colors at random. 	

Example widget configuration:

```
{
  "name": "Trending",
  "type": "TrendingWidget",
```

```

"x": 0,
"y": 0,
"width": 2,
"height": 2,
"datasource": {
  "source": "SavedSearch",
  "config": {
    "type": "QUERY",
    "id": "1234"
  }
},
"widgetSettings": {
  "parametricField": "OVERALL_VIBE",
  "dateField": "AUTN_DATE",
  "numberOfBuckets": 25,
  "values": [
    {
      "name": "POSITIVE",
      "color": "purple"
    },
    {
      "name": "NEGATIVE",
      "color": "orange"
    }
  ]
}
}

```

Map Widget

For the Map widget, set type to **MapWidget**.

NOTE: Map widgets display correctly only if you configure the map visualizers. See [Configure Map Visualizations, on page 29](#).

This widget type requires a saved search. You must set the source property to **SavedSearch** in the widget configuration.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Type	Description	Default
<code>centerCoordinates</code>	Yes	Object	The coordinates to center the map on. This object has the following properties: <ul style="list-style-type: none"> <code>latitude</code> (number). The latitude coordinate to use as the center of the map. <code>longitude</code> (number). The longitude 	

Property	Required	Type	Description	Default
			coordinate to use as the center of the map.	
locationFieldPairs	Yes	String Array	The names of the configured field pairs to use as the location for the result markers. You find the names to use here in the <code>displayName</code> property of the maps section in the <code>config.json</code> configuration file.	
zoomLevel	Yes	Number	The level of zoom to use for the map. The value that you use for this option depends on your map tile server.	
clusterMarkers	No	Boolean	Set to true to cluster the result markers.	false
disableAutoZoom	No	Boolean	Set to true if you want the map to continue to show your original coordinates when the search results load. By default, Find modifies the zoom to show all the loaded markers.	false
maxResults	No	Integer	The maximum number of search results to display on the map.	1000

Example widget configuration:

```
{
  "name": "Map",
  "type": "MapWidget",
  "x": 1,
  "y": 1,
  "width": 2,
  "height": 2,
  "datasource": {
    "source": "SavedSearch",
    "config": {
      "type": "QUERY",
      "id": "1234"
    }
  },
  "widgetSettings": {
    "maxResults": 10000,
    "locationFieldPairs": ["DefaultLocation", "OtherLocation"],
    "centerCoordinates": {
      "latitude": 51.5,
      "longitude": 0.12
    },
    "zoomLevel": 3,
    "clusterMarkers": true
  }
}
```

```

    }
}

```

Video Panel Widget

For the Video Panel widget, set type to **VideoWidget**.

This widget type requires a saved search. You must set the source property to **SavedSearch** in the widget configuration.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Type	Description	Default
audio	No	Boolean	Set to true to play the audio for the video.	false
crossOrigin	No	String	The CORS settings to use (anonymous or use-credentials). You might need this option to enable Find to export video as an image in a PowerPoint report, if you host videos on a different server to Find. Use this option only if the server you use to host your videos supports CORS headers. You do not need this setting if your video is hosted on the same site as Find (including by reverse-proxy), or if you do not want to export video dashboards.	
loop	No	Boolean	Set to false if you do not want to replay the video when it finishes. In this case, the video stops after it reaches the end and does not replay until the widget refreshes. By default, the video loops.	true
restrictSearch	No	Boolean	Set to true to restrict the saved search to return only results with the content type field value video .	false
searchResultNumber	No	Integer	The number of the result that you want to play (for example, 2 to play the second result in the list).	1

NOTE: The widget displays a result only if it is type video. To ensure that the results include only videos, set `restrictSearch` to **true**.

Alternatively, you can set `searchResultNumber` to display a specific video result (for example, if you want to display a particular result from a snapshot saved search).

Example widget configuration:

```

{
  "name": "Video Widget",
  "type": "VideoWidget",
  "x": 1,
  "y": 1,
  "width": 2,
  "height": 2,
  "datasource": {
    "source": "SavedSearch",
    "config": {
      "type": "QUERY",
      "id": "1234"
    }
  },
  "widgetSettings": {
    "restrictSearch": true
  }
}

```

Static Content Widget

For the Static Content widget, set type to **StaticContentWidget**.

You cannot use a saved search for this widget type, because its content is independent from any search.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Type	Description	Default
html	Yes	String	The HTML to display in the widget.	

Example widget configuration:

```

{
  "name": "Static Content",
  "type": "StaticContentWidget",
  "x": 1,
  "y": 1,
  "width": 2,
  "height": 2,
  "widgetSettings": {
    "html": "<h1>Hello World!</h1>"
  }
}

```

Static Image Widget

For the Static Image widget, set type to **StaticImageWidget**.

You cannot use a saved search for this widget type, because its content is independent from any search.

The following table describes the options that you can use in the `widgetSettings` object.

Property	Required	Type	Description	Default
<code>url</code>	Yes	String	The URL of the image to display in the widget.	

Example widget configuration:

```
{
  "name": "Static Image",
  "type": "StaticImageWidget",
  "x": 1,
  "y": 1,
  "width": 2,
  "height": 2,
  "widgetSettings": {
    "url": "http://example.com/image.png"
  }
}
```

Current Time/Date Widget

For the Current Time/Date widget, set `type` to **CurrentTimeWidget**.

You cannot use a saved search for this widget type, because its content is independent from any search.

The following table describes the options that you can use in the `widgetSettings` object.

NOTE: The current time/date widget uses the `moment.js` library to format dates. For more information about the available formats, refer to the `moment.js` documentation.

Property	Required	Type	Description	Default
<code>dateFormat</code>	No	String	The date format to display. This option takes a <code>moment.js</code> date format string.	<code>ll</code>
<code>timeFormat</code>	No	String	The time format to display. This option takes a <code>moment.js</code> time format string.	<code>HH:mm z</code>
<code>timeZone</code>	No	String	The timezone to use in the date/time display. This option takes a <code>moment.js</code> timezone string. By default, the <code>moment.js</code> library attempts to display the local timezone.	

Example widget configuration:

```

{
  "name": "Current Time Date",
  "type": "CurrentTimeWidget",
  "x": 1,
  "y": 1,
  "width": 2,
  "height": 2,
  "widgetSettings": {
    "timeFormat": "HH:mm:ss Z"
  }
}

```

Time Last Refreshed Widget

For the Time Last Refreshed widget, set type to **TimeLastRefreshedWidget**.

You cannot use a saved search for this widget type, because its content is independent from any search.

The following table describes the options that you can use in the `widgetSettings` object.

NOTE: The time last refreshed widget uses the `moment.js` library to format times. For more information about the available formats, refer to the `moment.js` documentation.

Property	Required	Type	Description	Default
<code>dateFormat</code>	No	String	The date format to display. This option takes a <code>moment.js</code> date format string.	HH:mm z
<code>timeZone</code>	No	String	The timezone to use in the date/time display. This option takes a <code>moment.js</code> timezone string. By default, the <code>moment.js</code> library attempts to display the local timezone.	

Example widget configuration:

```

{
  "name": "Time Last Refereshed",
  "type": "TimeLastRefreshedWidget",
  "x": 1,
  "y": 1,
  "width": 1,
  "height": 1
}

```

Dashboard Export Notes

The Find dashboard user interface includes an option to export your dashboards to a Microsoft PowerPoint presentation Open XML format (.pptx).

For the **Video** and **Static Image** widgets, users can export the widgets only if you serve the videos or images from a domain that their browser is allowed to access by the CORS policy.

For the **Sunburst** widget, users can export only a single ring of the sunburst (if they attempt to export a two-level sunburst visualization, the presentation includes only the inner ring).

Example Dashboard Configuration

The following example JSON has a configuration for four example dashboards.

NOTE: This example configuration might not work directly in your Find without modification. For example, to use these dashboards, you must have a QUERY type saved search with ID 1, and you must have appropriate fields configured.

```
{
  "dashboards": [
    {
      "dashboardName": "Single widget dashboard",
      "enabled": true,
      "width": "1",
      "height": "1",
      "displayWidgetNames": "never",
      "widgets": [
        {
          "name": "Static Content",
          "type": "StaticContentWidget",
          "x": 0,
          "y": 0,
          "width": 1,
          "height": 1,
          "widgetSettings": {
            "html": "<h1>Welcome to the Find Dashboard</h1>"
          }
        }
      ]
    },
    {
      "dashboardName": "3 widget dashboard",
      "enabled": true,
      "width": "4",
```

```

"height": "4",
"updateInterval": 1000,
"displayWidgetNames": "onhover",
"widgets": [
  {
    "name": "Sunburst",
    "type": "SunburstWidget",
    "x": 0,
    "y": 0,
    "height": 2,
    "width": 2,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "id": 1,
        "type": "QUERY"
      }
    },
    "widgetSettings": {
      "firstField": "COMPANY",
      "secondField": "OVERALL_VIBE"
    }
  },
  {
    "name": "Trending",
    "type": "TrendingWidget",
    "x": 0,
    "y": 2,
    "height": 2,
    "width": 2,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "id": 1,
        "type": "QUERY"
      }
    },
    "widgetSettings": {
      "parametricField": "OVERALL_VIBE",
      "dateField": "AUTN_DATE",
      "numberOfBuckets": 20,
      "minDate": "2016-04-02T00:00:00Z",
      "maxDate": "2016-04-05T00:00:00Z",
      "values": [
        {
          "name": "POSITIVE",
          "color": "purple"
        },
        {

```

```

        "name": "NEGATIVE",
        "color": "orange"
    }
  ]
}
},
{
  "name": "Results List",
  "type": "ResultsListWidget",
  "x": 2,
  "y": 0,
  "height": 4,
  "width": 2,
  "datasource": {
    "source": "SavedSearch",
    "config": {
      "id": 1,
      "type": "QUERY"
    }
  },
  "widgetSettings": {
    "maxResults": 10
  }
}
]
},
{
  "dashboardName": "Alternative 3 widget dashboard",
  "enabled": true,
  "width": "4",
  "height": "2",
  "displayWidgetNames": "always",
  "widgets": [
    {
      "name": "Static Image",
      "type": "StaticImageWidget",
      "x": 0,
      "y": 0,
      "width": 1,
      "height": 2,
      "widgetSettings": {
        "url": "http://example.com/image.png"
      }
    },
    {
      "name": "Video Panel Widget",
      "type": "VideoWidget",
      "x": 1,
      "y": 0,
    }
  ]
}
}
}

```

```

        "width": 2,
        "height": 2,
        "datasource": {
            "source": "SavedSearch",
            "config": {
                "type": "QUERY",
                "id": "1"
            }
        },
        "widgetSettings": {
            "restrictSearch": true
        }
    },
    {
        "name": "Map Widget",
        "type": "MapWidget",
        "x": 3,
        "y": 0,
        "width": 1,
        "height": 2,
        "datasource": {
            "source": "SavedSearch",
            "config": {
                "type": "QUERY",
                "id": "1"
            }
        },
        "widgetSettings": {
            "locationFieldPairs": [
                "DefaultLocation"
            ],
            "centerCoordinates": {
                "latitude": 51.5,
                "longitude": 0.12
            },
            "zoomLevel": 3
        }
    }
]
},
{
    "dashboardName": "Multi-widget dashboard",
    "enabled": true,
    "width": "8",
    "height": "9",
    "displayWidgetNames": "always",
    "widgets": [
        {
            "name": "Trending",

```

```

    "type": "TrendingWidget",
    "x": 0,
    "y": 0,
    "width": 4,
    "height": 3,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "type": "QUERY",
        "id": "1"
      }
    },
    "widgetSettings": {
      "parametricField": "OVERALL_VIBE",
      "dateField": "AUTN_DATE",
      "numberOfBuckets": 15
    },
    "values": [
      {
        "name": "POSITIVE",
        "color": "red"
      }
    ]
  },
  {
    "name": "Sunburst",
    "type": "SunburstWidget",
    "x": 4,
    "y": 0,
    "width": 2,
    "height": 3,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "type": "QUERY",
        "id": "1"
      }
    },
    "widgetSettings": {
      "firstField": "CATEGORY",
      "secondField": "COMPANY"
    }
  },
  {
    "name": "Sunburst",
    "type": "SunburstWidget",
    "x": 6,
    "y": 0,
    "width": 2,

```

```

    "height": 3,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "type": "QUERY",
        "id": "1"
      }
    },
    "widgetSettings": {
      "firstField": "COMPANY",
      "secondField": "OVERALL_VIBE"
    }
  },
  {
    "name": "Current Time/Date",
    "type": "CurrentTimeWidget",
    "x": 0,
    "y": 3,
    "width": 1,
    "height": 2,
    "widgetSettings": {
      "timeFormat": "HH:mm z"
    }
  },
  {
    "name": "Last Time Refreshed",
    "type": "TimeLastRefreshedWidget",
    "x": 1,
    "y": 3,
    "width": 1,
    "height": 2
  },
  {
    "name": "Static Content",
    "type": "StaticContentWidget",
    "x": 2,
    "y": 3,
    "width": 3,
    "height": 3,
    "widgetSettings": {
      "html": "<h1>Find Multi-Widget Dashboard</h1>"
    }
  },
  {
    "name": "Map",
    "type": "MapWidget",
    "x": 5,
    "y": 3,
    "width": 3,

```



```

    "height": 3,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "type": "QUERY",
        "id": "1"
      }
    },
    "widgetSettings": {
      "locationFieldPairs": [
        "DefaultLocation"
      ],
      "centerCoordinates": {
        "latitude": 51.5,
        "longitude": 0.12
      },
      "zoomLevel": 3
    }
  },
  {
    "name": "Video",
    "type": "VideoWidget",
    "x": 0,
    "y": 5,
    "width": 2,
    "height": 4,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "type": "QUERY",
        "id": "1"
      }
    },
    "widgetSettings": {
      "restrictSearch": true
    }
  },
  {
    "name": "Results",
    "type": "ResultsListWidget",
    "x": 2,
    "y": 6,
    "width": 4,
    "height": 3,
    "datasource": {
      "source": "SavedSearch",
      "config": {
        "type": "QUERY",
        "id": "1"
      }
    }
  }

```

```
    }  
  },  
  "widgetSettings": {  
    "maxResults": 10  
  }  
},  
{  
  "name": "Topic Map",  
  "type": "TopicMapWidget",  
  "x": 6,  
  "y": 6,  
  "width": 2,  
  "height": 3,  
  "datasource": {  
    "source": "SavedSearch",  
    "config": {  
      "type": "QUERY",  
      "id": "1"  
    }  
  }  
}  
]  
}  
]  
}
```


Chapter 8: Configure Applications

This section describes how to configure Find to include other applications in the navigation sidebar.

- [Configure Application Links](#)92

Configure Application Links

You can configure Find to list some external applications in the navigation sidebar. For example, you might want to link to administrative user interfaces to allow your users to quickly access those applications, or you can link to other applications that are important to your organization.

You configure application links by using the `applications.json` configuration file, in the customization directory in your Find installation home directory. This configuration file contains the `applications` object, which is an array of application configuration objects. To add an application, you add an object to this array.

In the Find user interface, the **Applications** section in the navigation sidebar lists your applications in the same order that you list them in the configuration file.

When you configure an application, you set the name and URL to use for each application, and whether to open the application link in a new Web browser tab, or to use the current one.

TIP: If you belong to the **FindAdmin** role, you can reload the application configuration to make any configuration changes available to your users without restarting Find.

To reload the application configuration, you must send the following API call to Find directly, by typing the URL into your Web browser address bar. You must be logged into Find as a user with the **FindAdmin** role in the same Web browser, because Find uses the session cookie to authorize the action.

```
http://FindURL/api/admin/customization/config/reload
```

Where *FindURL* is the URL of your Find server.

This option also reloads any other customization configurations (for example, dashboards).

The following table lists the configuration properties that you can use for each application.

Property	Required	Type	Description
<code>applicationName</code>	Yes	String	The name to use for the application. This name is displayed in the Applications navigation section.
<code>url</code>	Yes	String	The URL to navigate to when a user clicks this menu item. This value must be a well-formed URL.
<code>openInNewTab</code>	No	Boolean	Set to true to open application links in a new Web

Property	Required	Type	Description
			browser tab. Set to false to open the link in the current tab. The default value is false .
enabled	No	Boolean	Set to true to enable the application link and display it in the Applications navigation section. Set to false to hide the application link. The default value is true .

The following example shows a simple configuration for three applications:

```
{
  "applications": [
    {
      "applicationName": "IDOL Data Admin",
      "url": "http://dataadmin.example.com:8080"
    },
    {
      "applicationName": "IDOL Admin (Content)",
      "url": "http://ida-content.example.com:9000/a=admin",
      "openInNewTab": true,
      "enabled": false
    },
    {
      "applicationName": "IDOL Admin (Community)",
      "url": "http://ida-community.example.com:9030/a=admin",
      "enabled": true
    }
  ]
}
```

For this example, the IDOL Data Admin link and the IDOL Admin (Community) link are listed in the Application list in Find. The IDOL Admin (Content) link is not enabled, and so it is not displayed in Find.

Chapter 9: Configure Templates

This section describes how to configure Find to use additional templates for the results list and preview pane.

- [Configure Templates](#) 94
- [Create Template Files](#) 96

Configure Templates

You can configure Find to use a custom template to display results and promotions in the search results list, and metadata in the preview panel. For example, you might want to use a larger thumbnail image and title in the result list, and to remove the summary.

You configure how Find uses the custom templates by using the `templates.json` configuration file, in the `customization` directory in your Find installation home directory. This configuration file contains JSON objects that allow you to configure different aspects of the Find results.

TIP: If you belong to the **FindAdmin** role, you can reload the template configuration to make any configuration changes available to your users without restarting Find.

To reload the template configuration, you must send the following API call to Find directly, by typing the URL into your Web browser address bar. You must be logged into Find as a user with the **FindAdmin** role in the same Web browser, because Find uses the session cookie to authorize the action.

`http://FindURL/api/admin/customization/config/reload`

Where *FindURL* is the URL of your Find server.

This option also reloads any other customization configurations (for example, dashboards).

The following table describes the configuration objects that you can include in your template configuration file. These objects are all optional.

Object	Type	Description
<code>searchResult</code>	Array	Defines the templates to use for search result items in the results list.
<code>promotion</code>	Array	Defines the templates to use for promotion items in the results list.
<code>previewPanel</code>	Array	Defines the templates to use for document metadata in the preview panel.
<code>entitySearch</code>	Array	Defines the templates to use for the entity search dialog box.

In each of these objects, you specify an array of template configurations, each of which specifies the template file to use and the circumstances in which to use the template.

The following table lists the configuration properties that you can use to specify a template.

Property	Required	Type	Description
file	Yes	String	The template file name. See Create Template Files, on the next page .
triggers	Yes	Object Array	<p>The triggers that specify when to use a template. This object can contain the following properties:</p> <ul style="list-style-type: none"> • <code>field</code> (string). Optional. The ID of a field that a document must contain for the trigger to activate. The ID is the key in the <code>fieldsInfo</code> section of the Find configuration file. You can optionally also specify <code>values</code> that this field must contain. • <code>values</code> (array, strings). Optional. An array of field values that the specified <code>field</code> must contain for the trigger to activate. The field values are case sensitive. If you set <code>values</code>, you must also set <code>field</code>. • <code>indexes</code> (array, strings). Optional. An array of IDOL databases that the document must come from for the trigger to activate. The index names are not case sensitive. <p>When you set <code>field</code> and <code>values</code>, a document activates the trigger if it contains at least one of the specified values in the specified field. If the list of values is empty, a document activates the trigger if it contains any value in the specified field.</p> <p>When you set <code>indexes</code>, a document activates the trigger if it comes from one of the specified IDOL databases.</p> <p>You can specify multiple field conditions in the trigger array. In this case, a document must match all the specified field conditions to activate the trigger. Similarly, if you set both <code>index</code> and <code>field</code> conditions in a trigger, a document must match all the specified conditions to activate the trigger.</p>

When displaying results, Find processes the templates in the order that you list them in the configuration file. For a particular document, Find uses the first template that the document matches. If there are no matching templates in your configuration, Find displays the result with the application default template.

The following example shows a simple search result configuration that applies to documents that contain the value **Living people** in the **categories** field, and that is in one of the **PEOPLE**, **PERSONS** or **PERSON** databases.

```
{
  "searchResult": [
    {
      "file": "person.handlebars",
      "triggers": [
        {
          "field": "categories",
          "values": ["Living people"]
        }
      ]
    }
  ]
}
```

```
    },  
    {  
      "indexes": " ["PEOPLE", "PERSONS", "PERSON"]  
    }  
  ]  
}  
]  
}
```

Create Template Files

Find processes templates by using `handlebars.js` (for more information, see <http://handlebarsjs.com/>).

Each template file must produce HTML output that represents one document.

Find runs the templates with the following Handlebars context:

```
interface ResultTemplateData {  
  reference: string;  
  title: string;  
  date: string;  
  database: string;  
  promotionName: string|undefined;  
  summary: string; // The highlighted summary, should not be HTML escaped  
  url: string|undefined; // URL of the original document or media file  
  icon: string; // Icon class based on content type  
  similarDocumentsUrl: string|undefined; // URL for linking to the similar  
documents view, only in result and promotion  
  thumbnailSrc: string|undefined, // Source attribute to load the thumbnail in an  
<img> tag  
  age: string; // Internationalised age of the document (e.g. "3 years ago")  
  fields: {id: string, values: string[], displayName: string, advanced: boolean}  
[];  
  weight: number;  
}
```

The following table also describes some Find custom helpers that you can use in your templates.

Helper	Description
<code>equal</code>	A block helper that takes two or more arguments. The block is printed only if the first argument is referentially equal to any of the subsequent arguments.
<code>hasField</code>	A block helper that takes one string argument (the field). The block is printed only if the document has a value for the field.
<code>hasFieldValue</code>	A block helper that takes two string arguments, the field and the value. The

	block is printed only if the document contains the specified value in the specified field.
<code>getFieldValue</code>	Prints the first value for the specified field. You can also use <code>getFieldValue</code> as a block helper.
<code>getFieldValues</code>	Prints all values for the specified field. You can also use <code>getFieldValues</code> as a block helper. You can optionally add the following parameters: <ul style="list-style-type: none"> • <code>max</code>. The maximum number of values to display. For example, <code>max=2</code>. By default, the helper prints all available values. • <code>delimiter</code>. The delimiter to use between field values. For example, <code>delimiter=' '</code>. The default value is <code>,</code> (a comma with a space). When you use <code>getFieldValues</code> as a block helper, the default value is a space. • <code>ellipsis</code>. The string to use after the final value, when there are more than the specified maximum. For example, <code>ellipsis=', and more.'</code>. The default value is <code>...</code>. You can set <code>ellipsis</code> to <code>'</code> to turn off the ellipsis.
<code>withField</code>	A block helper that executes the block in the context of the given field.
<code>i18n</code>	Prints a string from the application internationalization file.
<code>percentage</code>	Formats the specified number as a percentage. You can optionally add the following parameters: <ul style="list-style-type: none"> • <code>min</code>. Min. • <code>max</code>. Max. • <code>round</code>. The option to use for rounding the value. This parameter accepts the following values: <ul style="list-style-type: none"> ◦ <code>round</code>. Use standard rounding rules. ◦ <code>ceil</code>. Round up to the next integer. ◦ <code>floor</code>. Round down to the next integer. ◦ <code>N</code>. A number of decimal places to round to. ◦ <code>false</code>. Disable rounding.
<code>placeholderTemplate</code>	Fills in a template that contains placeholder values, by using variables that you specify. This helper takes two arguments. The first argument is a hash, array, or string that defines the values to use in the specified template. The second argument is the template string that contains placeholder values. You can also optionally add the following parameters: <ul style="list-style-type: none"> • <code>placeholder</code>. The symbol to use to specify placeholders. Each placeholder value must have this placeholder symbol at the start and end of the placeholder. The default symbol is a dollar sign (<code>\$</code>). For example, <code>\$username\$</code> or <code>\$0\$</code>. You can repeat the placeholder symbol to escape it. For example, <code>\$\$100</code> represents <code>\$100</code>.

	<ul style="list-style-type: none"> • delimiter. The delimiter to use to split the value when the value argument contains a string. The default value is a comma (,) <p>The placeholder value is a key that links to the values in your hash, array, or string. If you use a hash, you can use string keys. If you use an array or string value, use a zero-indexed numeric key that specifies which of the listed values to use.</p> <p>For example: <code>{{ placeholderTemplate 'liftoff!,one,two,three' 'countdown: \$3\$, \$2\$, \$1\$, and \$0\$' placeholder='\$' delimiter=', '}}</code> generates the string <i>countdown: three, two, one, and liftoff!</i>.</p>
prettyPrintNumber	<p>Pretty-prints the specified number (for example, it converts 1000 to 1,000). You can optionally add the following parameters:</p> <ul style="list-style-type: none"> • delimiter. The thousands delimiter to use. The default value is a comma (,) • round. The option to use for rounding the value. This parameter accepts the following values: <ul style="list-style-type: none"> ◦ round. Use standard rounding rules. ◦ ceil. Round up to the next integer. ◦ floor. Round down to the next integer. ◦ N. A number of decimal places to round to. ◦ false. Disable rounding. This value is the default. • plusIfPositive. Set to true to add a plus symbol (+) in front of positive numbers (for example +8). The default value is false.
regexIf	<p>A block helper that takes two string arguments, a regular expression and a string. The block executes if the regular expression matches the string. You can optionally add the following parameter:</p> <ul style="list-style-type: none"> • flags. Additional flags to apply to the regular expression match. For example, the flag <i>i</i> makes the matching case-insensitive. For a list of available flags, refer to https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp.
toExternalUrl	<p>Adds a URL schema prefix to the specified string, if it does not already have one. You can optionally add the following parameter:</p> <ul style="list-style-type: none"> • defaultProtocol. The prefix to use. The default value is <code>http://</code>.
toLowerCase	<p>Converts the specified string to lower case characters.</p>
toUpperCase	<p>Converts the specified string to upper case characters.</p>
toRelativeTime	<p>Prints a specified date string as a relative time (for example, <i>50 years ago</i>). You can optionally add the following parameters:</p> <ul style="list-style-type: none"> • dateFormat. The date format of the input string argument. This option takes a <code>moment.js</code> date format string. The default format is <code>DD-MM-YYYY</code>. For more information, refer to the <code>moment.js</code>

	<p>documentation.</p> <ul style="list-style-type: none">• <code>hideSuffix</code>. Set to true to hide the suffix (for example, to print <i>50 years</i> rather than <i>50 years ago</i>). The default value is false.• <code>round</code>. The option to use for rounding the value. This parameter accepts the following values:<ul style="list-style-type: none">◦ <code>round</code>. Use standard mathematical rounding rules. This value is the default.◦ <code>ceil</code>. Round up to the next integer.◦ <code>floor</code>. Round down to the next integer.◦ <code>N</code>. A number of decimal places to round to.
<code>wikiThumbnailHelper</code>	Converts a Wikipedia Commons image URL to one with a fixed thumbnail size. This helper takes two arguments. The first argument is the URL, and the second is the maximum thumbnail width (in pixels).

You reference fields in custom helpers by using the field ID (that is, the corresponding key in the `fieldsInfo` section of the Find configuration file). Document fields are available only if you explicitly reference them in that configuration section.

Example Templates

This page contains some simple examples of templates. There are more examples of default templates available at:

<https://github.com/microfocus-idol/find/tree/master/webapp/core/src/main/public/static/js/find/templates/app/page/search/default-custom-templates/>

Simple Template

The following template is a simple search result template that displays a thumbnail image for documents that contain a `thumbnail` field. It also displays the document summary, the `authors` field, and a link to get similar documents.

```
<div>
  <h1><i class="{{icon}}"></i>{{title}}</h1>
  {{#hasField 'thumbnail'}}
    
  {{/hasField}}
  <p>{{summary}}</p>
  <p>Author: {{getFieldValue "authors"}}</p>
  <a href="{{similarDocumentsUrl}}">See similar documents</a>
</div>
```

Multiple Format Styles

The following example shows some different ways of formatting the `authors` field in your results.

```
<p>Authors: {{getFieldValues "authors"}}</p>
<p>Only the first author: {{getFieldValue "authors"}}</p>
<p>
  Formatting all authors as badges:

  {{#getFieldValues "authors" ellipsis='<font color="gray">...</font>'}}
    <span class="badge"> {{ this }} </span>
  {{else}}
    (no authors)
  {{/getFieldValues}}
</p>
<p>
  Only showing the first author as a single badge:

  {{#getFieldValue "authors"}}
    <span class="badge"> {{ this }} </span>
  {{else}}
    (no author)
  {{/getFieldValue}}
</p>
<p>
  Only showing the first two authors, the rest as ellipsis:

  {{#getFieldValues "authors" max=2 ellipsis='<font color="gray">...</font>'}}
    <span class="badge"> {{ this }} </span>
  {{else}}
    (no authors)
  {{/getFieldValues}}
</p>
```

For example, if you have the following IDOL document:

```
#DRREFERENCE format-test
#DRETITLE Formatting test
#DREFIELD DOCUMENT_METADATA_AUTHOR_STRING="Alice"
#DREFIELD DOCUMENT_METADATA_AUTHOR_STRING="Bob"
#DREFIELD DOCUMENT_METADATA_AUTHOR_STRING="Charlie"
#DRECONTENT
Written by Alice, Bob and Charlie
#DRENDDOC
#DRENDDATANOOP
```

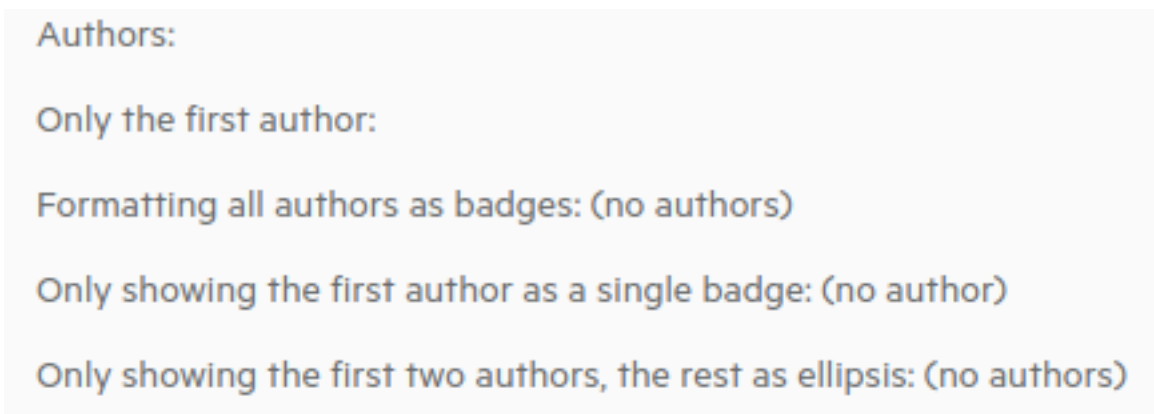
and a complementary configuration in the `fieldsinfo` section of the `Find config.json` file:

```
"authors": {
  "names": [
    "AU_DOCUMENT_METADATA_AUTHOR_STRING",
    "DOCUMENT_METADATA_AUTHOR_STRING"
  ]
}
```

For this example template and document, Find displays the following:



For a document without any authors, Find displays the following:



Chapter 10: Configure Find with System Properties

This section describes the features that you can configure by using system properties.

- [Configure the Log File Locations](#) 102
- [Configure IDOL Logs](#) 104
- [Configure Cache Size](#) 105
- [Configure the Java Heap Size](#) 106
- [Configure Default User Roles](#) 106
- [Configure Find to Use SSL](#) 107
- [Configure Session Timeout](#) 109
- [Rename the Session Cookie](#) 110
- [Configure Find to Add User Identifiers to Queries](#) 111
- [Configure Find with a Reverse Proxy](#) 111
- [Configure Find to Use a Single Pre-Authenticated User](#) 116

Configure the Log File Locations

By default, Find creates a folder of log files under the home directory. You can configure Find to store these log files in a different location by setting the `logging.path` property in the `java` run command.

To change the location of the log files

1. At the command line, send the `java` run command with the `logging.path` argument set to the location where you want to store your log files. For example:

```
java -Dlogging.path=[log file directory] -Didol.find.home=[home directory] -
Dserver.port=[port] -jar find.war
```

2. Restart Find to apply your configuration changes.

Find creates the specified directory if it does not exist, as long as the service has the appropriate permissions. It creates the logs directly in the specified directory.

If you run Find as a service on Windows, you can also add the `logging.path` property to the `find.xml` file.

If you run Find as a service on Linux, you can modify the `FIND_LOGGING_DIR` variable in the start scripts (`find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd).

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

Advanced Log Configuration

In the default configuration, Find produces a new log file every day.

Find uses a time-based rolling policy as part of a standard Logback configuration to create logs (see <https://logback.qos.ch/index.html>). If required, you can modify the Find logging configuration by updating the `logback-spring.xml` configuration file inside the Find war file.

To find the logback-spring XML configuration file

1. Open the `find.war` file as a ZIP archive.
2. Navigate to the `/WEB-INF/lib/lib` folder and find a JAR file with a name of the form `core-*.jar`, where `*` is a string that includes the Find version number.
3. Open the `core-*.jar` as a ZIP archive and extract the `logback-spring.xml` file.

For information about the settings that you can use to modify the way that Find generates the log file, refer to the Logback documentation. For example, the following link provides information about options that you can add to the existing log

format: <https://logback.qos.ch/manual/appenders.html#TimeBasedRollingPolicy>.

When you have made your modifications, you can update the version of the `logback-spring.xml` file in the `core-*.jar` file, and then update this file in the `find.war` archive.

Tomcat Access Log Configuration

In addition to the Find log files, there is also a Tomcat access log, `tomcat-access.log`. This uses the same logging mechanism as the other logs, and you can configure the details by using the `logback-spring.xml` file (see [Advanced Log Configuration, above](#)).

You can set the logging pattern to use by using the `server.tomcat.accesslog.pattern` system property when you start Find. This option uses the standard Apache log format. For more information on the patterns that you can use in the log string, refer to the Apache documentation at

<https://tomcat.apache.org/tomcat-8.0-doc/api/org/apache/catalina/valves/AbstractAccessLogValve.html>.

For example:

```
java -Dserver.tomcat.accesslog.pattern=combined -Didol.find.home=[home directory] -
Dserver.port=[port] -jar find.war
```

NOTE: In Find 11.5 and earlier, the Tomcat access log was called `access.log` and used a different logging configuration. If you upgrade to Find 12.9 from 11.5 or earlier, you must remove the `server.tomcat.accesslog.enabled=true` from your system properties.

If you previously disabled Tomcat access logging by setting `server.tomcat.accesslog.enabled=false`, you disable the new version by setting

```
server.tomcat.accesslog.pattern to an empty string (that is,
server.tomcat.accesslog.pattern=).
```

Configure IDOL Logs

By default, Find generates an `idol-access.log` file, and uses it to log all the actions it makes to IDOL component ACI and service ports. The log information includes:

- the user that sent the query.
- the IP address the user is connecting from.
- the IDOL component that the query is sent to (for example, QMS or Content)
- the host and port of the IDOL component.
- the full query that is sent to the IDOL component.
- the status code that the IDOL component returns.
- the time taken to complete the request.

The log also shows requests that failed without returning a HTTP status code (for example, because the IDOL component was turned off or blocked by a firewall).

You can turn off IDOL logging by setting the `idol.log.enabled` system property. You can also turn off just the information about time taken to complete requests by setting the `idol.log.timing.enabled` system property.

To turn off IDOL logging

- At the command line, send the `java run` command with the `idol.log.enabled` argument set to **false**. For example:

```
java -Didol.log.enabled=false -Didol.find.home=[home directory] -Dserver.port=[port] -jar find.war
```

To turn off timing information in the IDOL logs

- At the command line, send the `java run` command with the `idol.log.timing.enabled` argument set to **false**. For example:

```
java -Didol.log.timing.enabled=false -Didol.find.home=[home directory] -Dserver.port=[port] -jar find.war
```

If you run Find as a service on Windows, you can also add the `idol.log.enabled` and `idol.log.timing.enabled` properties to the `find.xml` file.

If you run Find as a service on Linux, you can add the argument to the existing arguments variable in `find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

Use an Action ID

You can optionally configure Find to send an action ID to IDOL with each request, which can help with tracking and troubleshooting.

When you enable action IDs, Find generates the action ID with a UUID and a prefix that you can configure. The default prefix is **Find-**. For example, `Find-b17a4a79-b3ed-4706-80a6-06404140e815`.

To use an action ID in IDOL requests

- At the command line, send the `java run` command with the `idol.log.actionid.enabled` argument set to **true**.

Optionally set the `idol.log.actionid.prefix` argument to the prefix that you want to use for your action IDs. For example:

```
java -Didol.log.actionid.enabled=true -Didol.log.actionid.prefix=Find- -
Didol.find.home=[home directory] -Dserver.port=[port] -jar find.war
```

If you run Find as a service on Windows, you can also add the `idol.log.actionid.enabled` and `idol.log.actionid.prefix` properties to the `find.xml` file.

If you run Find as a service on Linux, you can add the argument to the existing arguments variable in `find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

Configure Cache Size

If you see a Catalina cache warning in your log files when you run Find, you can use the `server.tomcat.resources.max-cache-kb` system property to increase the size of the cache.

The cache warning might appear similar to the following example:

```
org.apache.catalina.webresources.Cache.getResource Unable to add the resource at
[/WEB-INF/Find/example.jpg] to the cache because there was insufficient free space
available after evicting expired cache entries - consider increasing the maximum
size of the cache
```

The maximum size of the cache is set in kilobytes. The default value is 20480 (20 MB).

To set the cache max size property

- Start Find with the Java run command, and include the `server.tomcat.resources.max-cache-kb` argument. For example:

```
java -Dserver.tomcat.resources.max-cache-kb=30480 -Didol.find.home=[home
directory] -Dserver.port=[port] -jar find.war -uriEncoding utf-8
```

If you run Find as a service on Windows, you can also add this argument to the `find.xml` file.

If you run Find as a service on Linux, you can add the argument to the existing arguments variable in `find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

For more information on installing and running Find as a service on Windows or Linux, see [Install Find, on page 15](#).

Configure the Java Heap Size

You can configure the Java heap size for Find by setting the size in the Java run command.

To configure the Java heap size

- At the command line, send the java run command with the `Xmx"[HeapSize]"m` argument set. For example:

```
java -Xmx2048m -Didol.find.home=[home directory] -Dserver.port=[port] -jar
find.war
```

If you run Find as a service on Windows, you can also add the `Xmx` property to the `find.xml` file.

If you run Find as a service on Linux, you can set or modify the java heap size in the start scripts (`find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd).

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

Configure Default User Roles

You can configure Find to set some default roles for users that do not have a valid Find role in the IDOL Community component.

You can use this option if you are using an IDOL Community component that authenticates by using a third-party repository (such as LDAP). In this case, the third-party repository handles the authentication, and the IDOL Community component creates the Find user when they log in for the first time.

When you define default roles, Find applies the configured default roles to the new user when they log in for the first time. Find applies these roles in addition to any existing roles in Community.

NOTE: Find applies default roles only if the user does not have enough permissions in the IDOL Community component to log on to Find.

For example, if the user has only the `FindBI` role in Community, Find applies the default roles (for example `FindUser`) so that the user can log on. However, if the user has the `FindUser` role in Community, Find does not apply your default roles (even if the default role list also contains other roles).

To configure default user roles in Find

- Start Find with the Java run command, and include the following arguments:

```
-Dfind.defaultRoles=list_of_roles
```

where *list_of_roles* is a comma-separated list of the user roles that you want to assign by default to new users.

For example:

```
java -Dfind.defaultRoles=FindUser -Didol.find.home=C:\ProgramData\Find -
Dserver.port=8080 -jar find.war -uriEncoding utf-8
```

If you run Find as a service on Windows, you can also add the same arguments to the `find.xml` file.

If you run Find as a service on Linux, you can add the argument to the existing arguments variable in `find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

For more information on installing and running Find as a service on Windows or Linux, see [Install Find, on page 15](#).

Configure Find to Use SSL

By default, Find runs in plain HTTP mode. You can configure it to use SSL communications, by setting the appropriate system properties in the Java run command.

NOTE: If you enable SSL, you cannot use plain HTTP with Find.

To configure Find to use SSL

- Start Find with the Java run command, and include the following arguments:

```
-Dserver.ssl.key-store=path_to_keystore
-Dserver.ssl.key-store-password=keystore_password
```

```
-Dserver.ssl.key-password=key_password
-Dserver.port=server_port
```

where,

<i>path_to_keystore</i>	is the path to a keystore. You must create a keystore and import your certificates into it. By default, Find expects this keystore to be in JKS format. For more information on JKS keystore creation, see https://docs.oracle.com/cd/E19509-01/820-3503/ggfen/index.html . NOTE: If you want to use a keystore in a different format, you must also set the <code>-Dserver.ssl.key-store-type</code> argument to the type of keystore that you want to use. For example: <code>-Dserver.ssl.key-store-type=pkcs12</code>
<i>keystore_password</i>	is the password for the keystore.
<i>key_password</i>	is the password for the key inside the keystore.
<i>server_port</i>	is the port to user for Find. To use SSL, you must change this value from the default port (that is, you must not use port 8080). Typically you use port 8443, but you can use any valid port value.

For example:

```
java -Dserver.ssl.key-store=/etc/ssl/private/keystore.jks -Dserver.ssl.key-store-password=MyPassword -Dserver.ssl.key-password=KeyPassword -
Didol.find.home=[home directory] -Dserver.port=8443 -jar find.war -uriEncoding
utf-8
```

If you run Find as a service on Windows, you can also add the same arguments to the `find.xml` file.

If you run Find as a service on Linux, you can add the argument to the existing arguments variable in `find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

For more information on installing and running Find as a service on Windows or Linux, see [Install Find, on page 15](#).

Configure Find to Trust a Custom Certificate Authority

You can configure Find to accept additional Certificate Authority (CA) certificates, beyond the standard ones. This configuration is necessary only when you have configured your IDOL components to use TLS certificates signed by a custom CA.

To configure Find to use a custom CA

1. Create a truststore file that contains the CA certificate chain. The truststore is the same type of file as a keystore file (see [Configure Find to Use SSL, on page 107](#)). You can create one by using `keytool`, which comes with JRE. For example:

```
keytool -keystore '.../output-truststore.jks' -importcert -file
'.../ca.cert.pem'
```

NOTE: Find trusts only trust certificates in this store. If you also want to trust the standard CAs, you must add them manually. For example, you can copy the truststore from your JRE and add your custom CAs to it.

2. Start Find with the Java run command, and include the `javax.net.ssl.trustStore` argument set to the location of your truststore. For example:

```
java -Djavax.net.ssl.trustStore=.../truststore.jks -Didol.find.home=[home
directory] -Dserver.port=[port] -jar find.war
```

If you run Find as a service on Windows, you can also add the same arguments to the `find.xml` file.

If you run Find as a service on Linux, you can add the argument to the existing arguments variable in `find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

For more information on installing and running Find as a service on Windows or Linux, see [Install Find, on page 15](#).

Configure Session Timeout

By default, a user session can remain idle for one hour before Find terminates it automatically. You can edit this setting by setting the `server.session.timeout` system property to the number of seconds after which sessions should end. For example, `server.session.timeout=7200` sets a session timeout of 2 hours.

NOTE: The session timeout does not apply when a user opens a dashboard in full screen mode. See [Find Dashboards, on page 66](#).

To set the session timeout property

- Start Find with the Java run command, and include the `server.session.timeout` argument. For example:

```
java -Dserver.session.timeout=3600 -Didol.find.home=[home directory] -
Dserver.port=[port] -jar find.war -uriEncoding utf-8
```

If you run Find as a service on Windows, you can also add the same `-Dserver.session.timeout` argument to the `find.xml` file.

If you run Find as a service in Linux, you can add the argument to the existing arguments variable in `find.sh` for SysV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

For more information on installing and running Find as a service on Windows or Linux, see [Install Find, on page 15](#).

NOTE: Polling for saved searches counts as user activity, and delays a session timeout for the user. If your polling interval is shorter than your session timeout, the polling causes the session to continue until you close the browser window. See [Enable Polling for Saved Searches, on page 31](#).

Rename the Session Cookie

By default, Find uses the session cookie `FINDSESSIONID` to store session details. You can optionally rename the session cookie, for example if you want to run multiple instances of Find on the same domain and keep the session details separate.

To rename the session cookie

- Start Find with the Java run command, and include the following arguments:

```
-Dserver.session.cookie.name=MYNEWSESSIONNAME
```

where `MYNEWSESSIONNAME` is the new session cookie that you want to use.

For example:

```
java -Dserver.session.cookie.name=FIND1SESSIONID -Didol.find.home=[home
directory] -Dserver.port=[port] -jar find.war -uriEncoding utf-8
```

If you run Find as a service on Windows, you can also add the same arguments to the `find.xml` file.

If you run Find as a service on Linux, you can add the argument to the existing arguments variable in `find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd.

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

For more information on installing and running Find as a service on Windows or Linux, see [Install Find, on page 15](#).

Configure Find to Add User Identifiers to Queries

You can configure Find to add additional parameters to identify the user in the IDOL backend actions that use search filters (such as `Query` and `GetQueryTagValues`). When you use QMS, you can use this option if you want to use custom query adjustment for different users. You might also want to use it to make it easy to troubleshoot.

To use this option, you set the `idol.user.request.prefix` system property to a prefix to use for the user parameters. When you set this property, Find adds a parameter with the specified prefix to the requests, set to the name of the user sending the request.

You can also add user fields as additional parameters, by setting the `idol.user.request.fields` system property to a comma-separated list of the user fields to include. Find adds each field as a parameter with the specified prefix, set to the value for that user.

To configure Find to add user parameters to queries

1. At the command line, send the `java run` command with the `idol.user.request.prefix` argument set to the prefix to use. Optionally also set the `idol.user.request.fields` argument to a comma-separated list of user fields. For example:

```
java -Didol.user.request.prefix=Find -Didol.user.request.fields=Department -
Didol.find.home=[home directory] -Dserver.port=[port] -jar find.war
```

2. Restart Find to apply your configuration changes.

This example adds the parameter `FindUser=username` to the search ACI actions that Find sends to your IDOL components, and adds a `FindDepartment` parameter, set to the value of the **Department** user field.

If you run Find as a service on Windows, you can also add the `idol.user.request.prefix` and `idol.user.request.fields` properties to the `find.xml` file.

If you run Find as a service on Linux, you can add the arguments to the existing arguments variable in the start scripts (`find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd).

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

Configure Find with a Reverse Proxy

You can use Find with a reverse proxy over either HTTP(S) or Apache JServ Protocol (AJP).

With a reverse proxy, you can choose to manage authentication for your users, and the reverse proxy allows users to access the Find application with a default set of user roles, which you can define.

NOTE: You cannot configure the reverse proxy to assign an administrator user role. Your administrators must have access to the Find application by another route.

Using a reverse proxy can allow you to:

- add security and protect the identity of your backend services.
- pre-authenticate your users, enabling a single sign-on (SSO) workflow.
- provide SSL termination.
- improve performance by adding compression or caching.

The following sections describe how to configure Find to use a reverse proxy, and how to configure various types of reverse proxy.

Configure Find to Use the Reverse Proxy

You configure Find to use a reverse proxy by setting the `server.reverseProxy` system property.

When you set `server.reverseProxy` to **true**, the Find application listens for AJP connections on a port that you can define by using the `server.ajp.port` system property.

The reverse proxy must translate incoming HTTP(S) connections from your clients into AJP connections to Find. In AJP mode, the application reads the user name from incoming requests, so you must set up remote authentication. You cannot encrypt the connection from the reverse proxy to the application.

By default, `server.reverseProxy` is **false**. In this case, the Find application is available only over HTTP or HTTPS. Remote authentication is not possible in this mode. However, you can encrypt the connection with SSL. In this mode, users authenticate by using the proxied login page.

In both these methods, the reverse proxy must rewrite the request path, response Location headers, and cookie paths.

Set the Reverse Proxy System Property

You can use the following procedure to set the `server.reverseProxy` system property.

To configure Find to use a reverse proxy

1. At the command line, send the `java run` command with the `server.reverseProxy` argument set to **true**. For example:

```
java -Dserver.reverseProxy=true -Didol.find.home=[home directory] -
Dserver.port=[port] -jar find.war
```

By default, this option opens an AJP port on port 8009. To use a different port, set the `server.ajp.port` argument to the correct port number.

You can also specify the roles to assign to your users by setting the `find.reverse-proxy.pre-authenticated-roles` system property:

- Set `find.reverse-proxy.pre-authenticated-roles` to a comma-separated list of Find Community role names (see [User Roles, on page 22](#)) to use hard-coded role names.
- Set `find.reverse-proxy.pre-authenticated-roles` and leave the value blank to use roles from the Community component. For example:

```
java -Dserver.reverseProxy=true -Didol.find.home=[home directory] -
Dserver.port=[port] -jar find.war -Dfind.reverse-proxy.pre-authenticated-
roles=
```

To use this option, you must ensure that your Community component configuration file has `CheckEntitlement` set to `False` (the default value).

The default value for this property is `FindUser`.

NOTE: This setting does not assign any roles in the Community component. It gives all users that use the reverse proxy the same permissions to access Find.

Another option is to set `find.reverse-proxy.pre-authenticated-username` to a specific user name. This option bypasses authentication so that any user that accesses Find is logged in automatically as that user name. See [Configure Find to Use a Single Pre-Authenticated User, on page 116](#).

2. Restart Find to apply your configuration changes.

If you run Find as a service on Windows, you can also add the `server.reverseProxy` property to the `find.xml` file.

If you run Find as a service on Linux, you can add the arguments to the existing arguments variable in the start scripts (`find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd).

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

Configure the Reverse Proxy

The following sections provide configuration examples for using different reverse proxy servers.

Apache 2

Apache 2 is a free open source Web server that you can configure as a reverse proxy by using the `mod_proxy` module.

The following configuration example exposes the Find running on `find.example.com` at `https://localhost:443/find`, using AJP to enable remote authentication. The application AJP port is 8009, and the HTTPS port is 8443.

For this configuration, you must enable the `mod_proxy`, `mod_proxy_ajp`, `mod_proxy_wstunnel`, and `mod_ssl` modules.

```

SSLEngine on
SSLProxyEngine on

SSLCertificateFile /path/to/my-certificate.crt
SSLCertificateKeyFile /path/to/my-key.key

<Location /find/>
  AuthType YOUR_AUTH_MODULE
  require valid-user

  ProxyPass "ajp://find.example.com:8009/"
  ProxyPassReverse /

</Location>

```

The following configuration example exposes the Find running on `find.example.com` at `https://localhost:8443/find`, using HTTPS to communicate with the application.

For this configuration, you must enable the `mod_proxy`, `mod_proxy_http`, `mod_proxy_wstunnel`, and `mod_ssl` modules.

```

SSLEngine on
SSLProxyEngine on

SSLCertificateFile /path/to/my-certificate.crt
SSLCertificateKeyFile /path/to/my-key.key

<Location /find/>
  AuthType YOUR_AUTH_MODULE
  require valid-user

  ProxyPass "https://find.example.com:8443/"
  ProxyPassReverse /

</Location>

```

SAML

You can configure Apache 2 to act as a SAML service provider, which ensures that users are authenticated before passing them through to the application, and sends them to an identity provider if they are not.

For this configuration, you must install and enable the `mod_auth_mellon` module.

```

SSLEngine on
SSLProxyEngine on

SSLCertificateFile /path/to/my-certificate.crt
SSLCertificateKeyFile /path/to/my-key.key

<Location /find/>

```

```

AuthType "Mellon"
AuthName YOUR_AUTH_NAME
Require valid-user

MellonEnable "auth"
MellonSecureCookie On
MellonVariable "session_cookie"
MellonUser "NAME_ID"
MellonEndpointPath "/mellon"
MellonDefaultLoginPath "/"

# Session TTL seconds
MellonSessionLength 86400

MellonSPMetadataFile /path/to/service/provider/metadata
MellonSPPrivateKeyFile /path/to/service/provider/key/file
MellonSPCertFile /path/to/service/provier/cert/file
MellonIdPMetadataFile /path/to/idp/metadata/file

ProxyPass "https://find.example.com:8443/"
ProxyPassReverse /
</Location>

```

NGINX

Nginx is a free open source Web server and reverse proxy. It does not support the AJP protocol, so remote authentication is not possible.

The following example configuration exposes the Find instance running on `https://find.example.com:8443/find` at `https://localhost:443/find`.

```

server {
    listen 443 ssl default_server;

    ssl_certificate /path/to/my-certificate.crt;
    ssl_certificate_key /path/to/my-key.key

    location /find/ {
        proxy_pass https://find.example.com:8443/find;
        proxy_cookie_path /find;
    }
}

```

Internet Information Services (IIS)

IIS is a Web server created by Microsoft that is built into many versions of Windows. You can configure it as a reverse proxy in HTTP mode, by using the URL Rewrite and Application Request Routing (ARR) modules. In later versions of IIS, the Web server can automatically proxy WebSockets connections.

You can enable the AJP protocol by using the Apache Tomcat ISAPI redirector module.

To reverse proxy in HTTP mode, you must configure a URL Rewrite rule that redirects incoming requests to the application, and another rule that rewrites Location headers in the response.

Configure Find to Use a Single Pre-Authenticated User

You can configure Find to always log in with a single pre-authenticated user. This option bypasses authentication so that any user that accesses Find is logged in automatically with that user name and any associated permissions.

To use this option, you must set the `server.reverseProxy` system property to **true**, even if you do not want to use a reverse proxy. The reverse proxy is not required, because the normal Find HTTP(S) ports still work.

You then set the `find.reverse-proxy.pre-authenticated-roles` and `find.reverse-proxy.pre-authenticated-username` system properties to the role and user name that you want to use for all users.

To configure Find to use a single pre-authenticated user

1. At the command line, send the `java run` command with the `server.reverseProxy` argument set to **true**, the `find.reverse-proxy.pre-authenticated-roles` argument set to the roles to use, and the `find.reverse-proxy.pre-authenticated-username` argument set to the user name to use. For example:

```
java -Dserver.reverseProxy=true -Dfind.reverse-proxy.pre-authenticated-roles=FindUser,FindBI -Dfind.reverse-proxy.pre-authenticated-username=anon -Didol.find.home=[home directory] -Dserver.port=[port] -jar find.war
```

2. Restart Find to apply your configuration changes.

If you run Find as a service on Windows, you can also add the `server.reverseProxy` and `find.reverse-proxy.pre-authenticated-username` properties to the `find.xml` file.

If you run Find as a service on Linux, you can add the arguments to the existing arguments variable in the start scripts (`find.sh` for SystemV, `find.conf` for Upstart, or `find.service` for systemd).

When you modify the Find configuration by modifying the XML file or start scripts, you must restart Find to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service find restart` to restart the service.

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