TIBCO Spotfire® Metrics Modeler User's Guide

Software Release 6.0
November 2013

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Important Information

Contents

TIBCO Spotfire Metrics Documentation and Support Services

All TIBCO documentation is available in the TIBCO Documentation Library, which can be found at http://docs.tibco.com

Product-Specific Documentation

The following documents for this product can be found in the TIBCO Documentation Library:

- *TIBCO Spotfire® Metrics Release Notes*
- *TIBCO Spotfire® Metrics Prerequisites and Installation*
- *TIBCO Spotfire® Metrics User Guide*
- *TIBCO Spotfire® Metrics Optimizing KPI Authoring*
- *TIBCO Spotfire® Metrics License Agreement*

System Requirements

For a list of system requirements for this product and other TIBCO Spotfire® products, visit this site:

http://support.spotfire.com/sr.asp

How to Contact TIBCO Support

For comments or problems with this manual or the software it addresses, contact TIBCO Support as follows:

- For an overview of TIBCO Support, and information about getting started with TIBCO Support, visit this site:

  http://www.tibco.com/services/support

- If you already have a valid maintenance or support contract, visit this site:

  https://support.tibco.com

Entry to this site requires a user name and password. If you do not have a user name, you can request one.

How to Join TIBCOmmunity

TIBCOmmunity is an online destination for TIBCO customers, partners, and resident experts. It is a place to share and access the collective experience of the TIBCO community.

TIBCOmmunity offers forums, blogs, and access to a variety of resources. To register, go to

http://www.tibcommunity.com

Overview

Using TIBCO Spotfire® Metrics Modeler, you can do the following:

- Connect to different data sources within your organization
- Create smart views of your data as key performance indicators (KPIs)
- Deliver Key Performance Indicators (KPIs) to users via:
  - Spotfire Metrics Viewer Service accessed through Internet browsers.
  - Mobile Devices.
- Use in-memory caches to scale support for:
  - Very large data.
  - Very large numbers of users.

Click the following links for instructions for various tasks in Spotfire Metrics Modeler:

- Creating and managing data sources
- Creating and managing queries
- Creating and managing KPI Sets
- Creating and managing schedules
- Loading and managing users
- Creating and managing user constraints, permissions, groups, and active directory group syncs
- Managing Spotfire Metrics application settings

Data Sources

Spotfire Metrics Modeler supports a wide range of both static and dynamic data sources as follows:

Source	Connection Method
Analysis Services	A connection string. You must have Microsoft Online Analytical Processor (MSOLAP) provider for SQL 2012 installed on your machine: 1. Click the following link to download the MSOLAP provider: http://www.microsoft.com/en-us/download/details.aspx?id=29065. 2. Click **Install Instructions**. 3. Click the appropriate package (**X86** or **X64**) to download *Microsoft® Analysis Services OLE DB Provider for Microsoft® SQL Server® 2012*.
Microsoft Excel®	The file path to Microsoft Excel spreadsheets. Set default path to C:\My Spreadsheet. You must install the Microsoft Excel OLEDB data provider, which is part of the Microsoft

	Access Database Engine 2010 Redistributable: http://www.microsoft.com/en-us/download/details.aspx?id=13255
Google® Spreadsheet	A URL. Requires Google log in information.
Oracle®	A connection string: 1. Get ODAC 32bit xcopy and unzip (http://www.oracle.com/technetwork/database/windows/downloads/utilsoft-087491.html). 2. Run "install.bat all c:\oracle odac" at admin command prompt. 3. Administrator connection string: • Data Source=(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=wavdevoracle01.my.companyserver.com)(PORT=1521))(CONNECT_DATA=(SERVER = DEDICATED)(SERVICE_NAME=orcl.my.companyserver.com)));User Id=MyDBTest;Password=pass@word1; 4. Run the following query to test: • Select ID, name from sample
SQL Server 2005 or later	A connection string: • Windows Authentication Server=<server>;Database=<database>; Integrated Security=SSPI; SQL Authentication Server=<server>;Database=<database>; Uid=<username>;Pwd=<password>;
Teradata®	A connection string. You must install the Teradata OLEDB provider: http://downloads.teradata.com/download/connectivity/net-data-provider-for-teradata

Spotfire Metrics Modeler Data Source Tasks

- Adding a new data source
- Editing an existing data source
- Deleting an existing data source
- Search data sources
- Filter by status and or by data source type

Adding a New Data Source

Refer to the previous table for any system requirements prior to adding a new data source.

1. In the **Data Sources** menu, click **Add Data Source**.
2. Provide the following information:
   - Data source title
   - Data source description
   - Data source type
   - Input connection string
3. Click **Test Connection**.

4. Click **Save**.

Editing a Data Source

1. In the **Data Sources** menu, highlight the **data source** you want to edit.
2. Click **Edit**.
3. Update information.
4. Click **Save**.

Deleting a Data Source

TIP If one or more queries are retrieved from a data source, the option to delete is disabled.

1. In the **Data Sources** menu, highlight the **data source** you want to delete.
2. Click **Delete.**
3. Click **Confirm** in the resulting popup

Queries

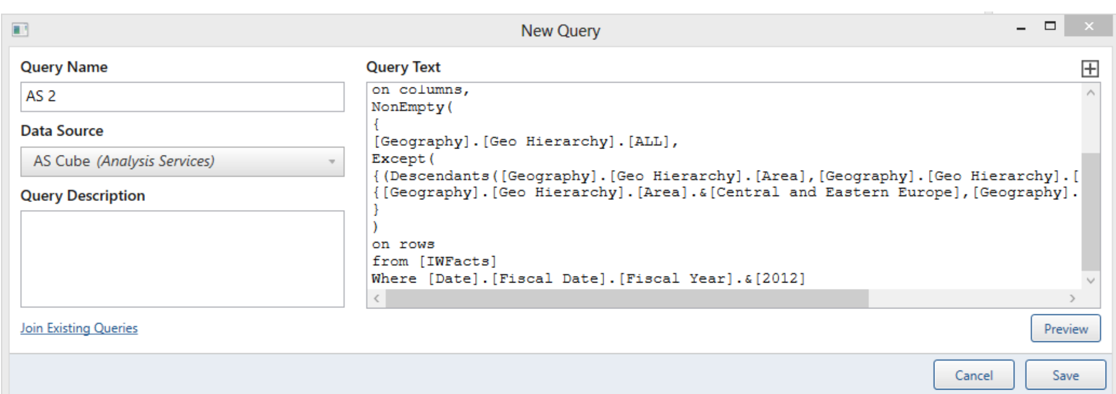
Spotfire Metrics Modeler queries enable you to create datasets from your data sources to create KPI Sets.

Spotfire Metrics Modeler Query Tasks:

- Adding new query
- Editing query
- Deleting query
- Refreshing query

Adding a New Query

1. In the **Queries** menu, click **Add Query**.
2. Provide the query name, data source, description and query text.



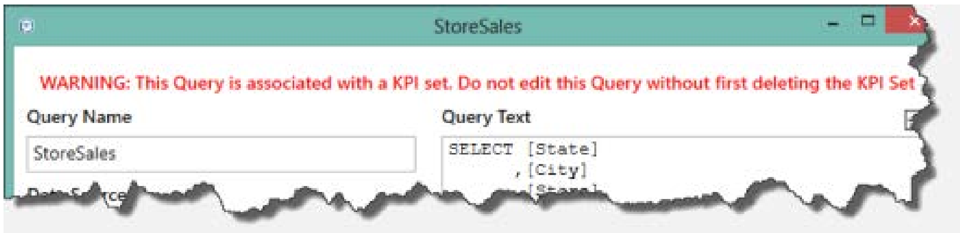
3. Click **Preview** to review the details, and then click **Save**.

The newly-added query displays at the bottom of the consolidated list of queries.

Editing a Query

1. Highlight a single query and then click **Edit**.

NOTE If the query is associated with a KPI Set, a warning appears. You must first delete the KPI Set or any dependent feeds before editing the query.



2. Click **Save**, once edits have been completed.

Deleting a Query

1. Highlight a single query and then click **Delete**.

NOTE: If one or more KPI Sets are using a query, the option to delete the query is disabled.

2. Click **Confirm** to delete the query.

Refreshing a Query

1. Highlight a single query and then click **Refresh**.

KPI Library

Using Spotfire Metrics Modeler, you can create, manage and maintain the KPI Sets for your organization. The culmination of KPI Sets is the KPI Library.

KPI Sets add additional metadata to queries. Metadata enables queries to present as KPIs to users on various devices. Metadata describes the following:

- Mapping of query dataset to KPI Set definitions
- Threshold settings for visual indication of performance
- Other formatting and presentation settings

NOTE Once you've read this section, it is recommended you read the detailed documentation, Optimizing KPI Set Authoring.

Spotfire Metrics Modeler KPI Library Tasks

- Adding KPI Set

- Editing KPI Set
- Deleting KPI Set

Adding a New KPI Set

New KPI Set Information

1. In the **KPI library** menu, click **Add KPI Set**.
2. Provide the KPI Set title and description.
3. Click **Next**.

Select a Query

4. Select a **query** from the drop-down menu, and then click **Next.**

Choose Columns

One or more columns must be selected as a Dimension and can be defined as any of the following: KPI, Comparative, Variance or Supplement in the next set of steps. Dimensions are groupings of data.

LEVELS By selecting levels , you can select a hierarchy to drill through KPIs.

FILTERS If a column is selected as a Filter, Spotfire Metrics Modeler creates the relationship between the hierarchies. For example, a district manager in Georgia may select a number of filters including State, Region and City – the district manager can then drill down to view metrics on all 3 of his stores in Atlanta.

Perform the following steps in the table to configure either a Dimension or Measure:

Column Type	Dimensions
Dimension	1. Click **Set as Trend**, if desired. 2. Select the trend **Level** from the drop-down menu for drilldown and roll up, if desired, e.g. Region (level 1), State (level 2), and City (level 3). **NOTE:** You must have 1 level set. 3. Select Dimension **Type** from the drop-down menu. • **Date Time** options: (For formatting your trend date.) o Date o Date Time (12 hr) o Date Time (24 hr) o Time (12 hr) o Time (24 hr)

	o Provide prefix and/or suffix 4. Provide name if different from the pre-populated name. 5. Check as a **Filter**, if desired.
Measure	1. Check as a **Measure.** 2. Provide name if different from the pre-populated name.

5. Click **Next**.

Configure Measures

Columns selected as Measures in the previous step are now available.

6. Define a column by selecting a **measure type** from the drop-down menu.

   Columns can be defined as any of the following: KPI, Comparative, Variance or Supplementary. Various mathematical manipulations can be applied to the selected columns defined as Dimensions.

   - **KPI**: Your primary driving data.
   - **Comparative**: Data used to compare with a KPI.
   - **Variance**: The difference between a KPI and Comparative.
   - **Supplementary**: Data that can be used as an input to a calculated column.

   Select from the following options and provide further information for a KPI source column:

KPI Measures	Detail
Type	1. Select **KPI** from the drop-down menu
Name	2. Provide name if different from the pre-populated name.
	3. Select either **Currency**, **Date Time**, **Numeric**, or **Percentage** from the drop-down menu. The following options are available: **Currency** • Decimal places • Group separators • Negative numbers • Symbol **Date Time** • Date • Date Time (12 hr.)

	• Date Time (24 hr.) • Time (12 hr.) • Time (24 hr.) • Prefix • Suffix **Numeric** • Decimal places • Group separators • Negative numbers • Prefix • Suffix **Percentage** • Decimal places • Group separators • Negative numbers • Prefix • Suffix
	4. If the KPI has levels defined, select either **Average**, **Count**, **Max**, **Min, None** or **Sum,** from the drop-down menu. **NOTE:** If your KPI is marked as percentage, set the aggregation type to **Sum**. This ensures hierarchical data is displayed. 5. Click **OK** in each configured column.
Define a Variance	6. Before adding a threshold, you must first define a Variance, or reference point.
Add Thresholds	7. Add a threshold, if desired. This option is available if one or more columns are set as a variance. Every variance has a threshold defined that shows how it is behaving relative to expectation. Thresholds are set to determine when the color of the KPI changes. a. Click **Add Threshold.** b. Provide threshold title. c. Select a **reference point**. **TIP** The reference point should be set against particular KPI or Variance (for this particular threshold) and color scheme. For example when the thresholds appear on a graph, the red threshold line would show the numbers are below target and green shows numbers above target. Numbers within threshold limits are yellow.

		d. Select thresholds in absolute **Numbers** or **Percentages.** e. Select whether **Increasing is Better** or **Decreasing is Better**. **Example** (For example, increasing sales is better, or decreasing customer complaints is better better.) f. Click **OK**, and then click **Save**.
More Options	8.	Check **Manually set the target value** or **Report Link**, if desired. a. Manually select a measure column as the target value (comparative). b. To associate a report link with the KPI, type the name and URL, and then click **Add Link**, and then click **Save**.

Select from the following options and provide further information for a Comparative, Variance or Supplementary source column:

Measures	Detail
Type	1. Select **Comparative, Variance** or **Supplementary** from the drop-down menu.
Name	2. Provide name if different from the pre-populated name.
	3. Select either **Currency**, **Date Time**, **Numeric**, or **Percentage** from the drop-down menu. The following options are available: **Currency** • Decimal places • Group separators • Negative numbers • Symbol **Date Time** • Date • Date Time (12 hr) • Date Time (24 hr) • Time (12 hr) • Time (24 hr) • Prefix • Suffix **Numeric** • Decimal places • Group separators • Negative numbers

- Prefix
- Suffix

Percentage

- Decimal places
- Group separators
- Negative numbers
- Prefix
- Suffix

4. Select either **Average**, **Count**, **Max**, **Min, None** or **Sum,** from the drop-down menu.

   NOTE: If a variance or calculated column is marked as percentage, set the aggregation type to **Sum**. This ensures hierarchical data is displayed.

5. Click **OK** in each configured column.

7. Add any additional columns necessary by clicking **Add a Column**. A new window appears with a text input box.

TIP **Calculated Column:** The **Construct** button does not become active unless one of the following is used:

- `[KPI]`, `[MAIN]`: filters the selectable list by the defined KPIs.
- `[COMPARATIVE]`: filters the selectable list by defined Comparatives.
- [*any text*]: enables any item to be selected.
- any formula expression such as:
  100
  2 + 8
  9 * 15

TIP When you add a column, you can select a formula to create a relationship between KPI and Comparative. Columns defined as KPIs appear in the main drop-down menu and columns defined as Comparatives appear in the Target drop-down menu. The formula can be absolute or percentage based, or it can be constructed as per user requirement.

8. Click **Save.**

Editing a KPI Set

1. In the **KPI library** menu, click the **KPI Set** you want to edit.
2. Click **Edit**.
3. Click **Next** and then **Save**, once edits are complete.

Deleting a KPI Set

First, remove the KPI Set, and then remove from the KPI Library.

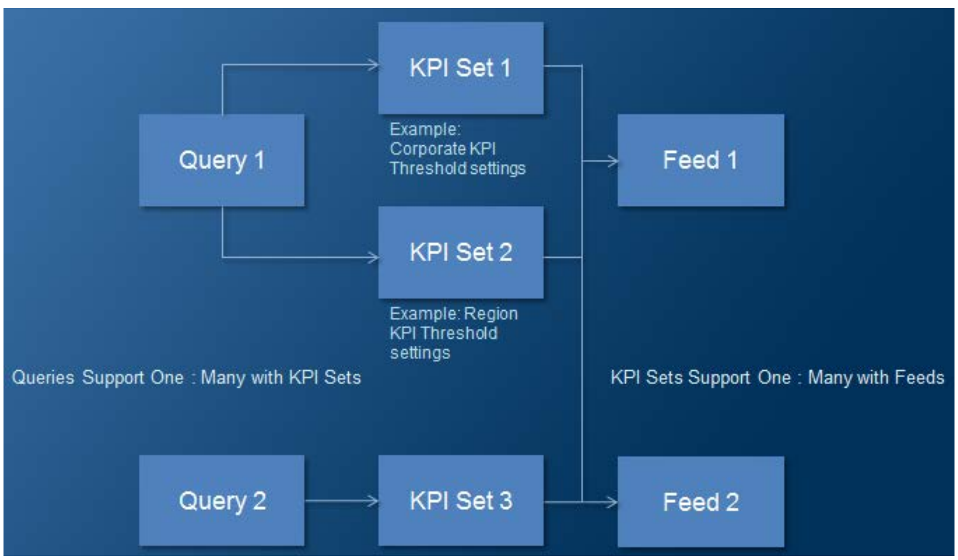
Note: If one or more Feeds is using a KPI Set, the option to delete the query is disabled.

1. In the **KPI library** tab, highlight the **KPI Set** you want to remove.
2. Click **Delete KPI Set**.
3. Click **Confirm** in the resulting popup

Spotfire Metrics Mobile Application Feeds

Note This section applies to the Spotfire Metrics mobile application.

Feeds enable KPI Sets to be grouped for publishing. They can be categorized to provide context for end users to view KPIs and for security alignment with groups of users.



Relationship Diagram. Query to KPI Sets to Feeds

Spotfire Metrics Modeler Feeds Tasks

- Adding feed
- Editing feed
- Deleting feed

Adding a Feed

1. In the **Feeds** tab, click **Add Feed**. .
2. Provide a name for the feed.
3. Select KPIs.
4. Click **Save**.

Editing a Feed

1. In the **Feeds** tab, click **Edit**.
2. Complete edits.
3. Click **Save**.

Deleting a Feed

1. In the **Feeds** tab, click **Delete**.
2. Click **Confirm** in the resulting popup

Schedules

Schedules provide a high level of scalability and remove performance concerns for data sources. Schedules support the following two basic functionalities: refresh (frequency of content) and caching (storing refreshed content in memory between refreshes).

Spotfire Metrics Modeler Schedule Tasks

- Adding schedule
- Editing schedule
- Deleting schedule

Scheduling applies at the following three levels:

- Query dataset results
- Spotfire Metrics Viewer Service
- Web Service/Spotfire Metrics

Refresh Period Options:

Refresh Options	Description
Minutes	Every *x* minutes
Hours	Every *x* hours
Days	Every *x* days

Adding a New Scheduler

1. In the **Schedules** menu, click **Add Scheduler**.
2. Provide the following information:

Field	Description
Title	Example: Sales Tuesday Scheduler
Description	Example: Sales – every Tuesday at 3pm

Query	Select a query from the drop-down menu.
Start Time	Time format is 24 hours, hh:mm and is on server time. **TIP** To adjust minutes, highlight minutes and proceed with the up and down arrows.
Interval Amount	Provide the interval time in minutes, hours or days.

3. Click **Save**.

Editing a Scheduler

1. In the **Schedules** menu, highlight the **scheduler** you want to edit.
2. Click **Edit**.
3. Complete edits.
4. Click **Save**.

Deleting a Scheduler

1. In the **Schedules** menu, highlight the **scheduler** you want to delete.
2. Click **Delete**.
3. Click **Confirm** in the resulting popup

Manage Users

Spotfire Metrics Modeler enables you to maintain and manage the users for your application, in order to control whether users are authorized to view feeds and to assign administrator roles to users.

Spotfire Metrics Modeler Users Management Tasks

- Adding user
- Editing user
- Deleting user

User Security – Standard Functionality

- User authentication, via Active Directory (AD).
- User authorization, supported by Spotfire Metrics using AD security groups, custom groups, and individual user settings.
  - o Refreshes from AD can be scheduled for changes to users & Security Groups.
- User authorization, access and viewing.
  - o The Spotfire Metrics Viewer Service is assigned to security groups (and/or individual users).

- o Authorization can be further refined with User Permissions and User Constraints.

Adding a New User

1. In the **Users** menu, click **Manage Users**, and then click **Add New User**.
2. Provide user alias.
3. Provide first name.
4. Provide last name.
5. Select **user's group** from the drop-down menu.
6. Select **user's active state** from the drop-down menu.
7. Click **Save**.

Editing a User

1. In the **Users** menu, click **Manage Users**, and then click the **user** you want to edit.
2. Complete edits for any of the following:
    - User alias
    - First name
    - Last name
    - Group
    - Active state
3. Click **Save**.

Deleting a User

1. In the **Users** menu, click **Manage Users**, and then select the check box next to the **user** you want to delete.
2. Click **Delete User**, and then click **Confirm** in the resulting popup

Manage User Constraints

User Constraints allows you to control which specific data is viewable and how a specified user views it.

Spotfire Metrics Modeler User Constraint Management Tasks

- Adding user constraint
- Editing user constraint
- Deleting user constraint

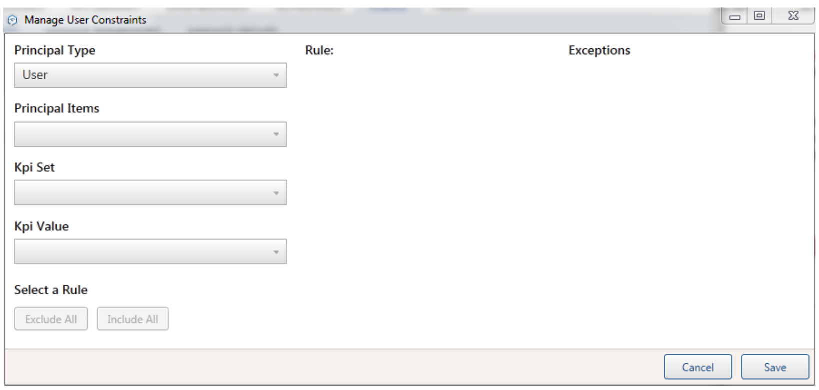
Adding a New User Constraint

1. In the **users** menu, click **Manage User Constraints**, click the **user** and then click **Add New User Constraint**.
2. Select the following:

- Principal type – user, group
- Principal items - user names
- KPI Set
- KPI value
- Rule
- Exceptions

TIP If Exclude All is set and no exceptions are specified, then all data are excluded, resulting in blank elements for all elements created from that KPI Set.

3. Click **Save**.



Editing a User Constraint

1. In the **Users** menu, click **Manage User Constraints**, and then select the check box next to the **user constraint** you want to edit.
2. Complete edits, and then click **Save**.

Deleting a User Constraint

1. In the **Users** menu, click **Manage User Constraints**, and then select the **user constraint** you want to delete.
2. Click **Delete**, and then click **Confirm** in the resulting popup

Manage Permissions

Spotfire Metrics Modeler Permissions Management Tasks

- Adding permission
- Editing permission
- Deleting permission

User permissions are based on principal type items and securable type items, displayed as follows:

Permission	Description
Principal type	User or group of users.
Principal	Selected user or selected group.
Securable type	Type of object: currently the only securable type is a Feed.
Securable	The object or item being secured.
Active	The permission has been applied.
Last visit date	Last modified date for the permission.
Registration date	Created date.

Adding a New Permission

1. In the **Users** menu, click **Manage Permissions**.
2. Click the **user name** to add new permissions, and then click **Add New Permission**.
3. Set the following options:
    - Principal type:
        - o user
        - o group
    - Principal items:
        - o specific user.
        - o specific group
    - Securable type:
        - o feed
    - Securable items:
        - o specific Feed
4. Click **Save**.

Editing a Permission

1. In the **Users** menu, click **Manage Permissions**, and then click the **user name** to edit.
2. Complete edits, and then click **Save**.

Deleting a Permission

1. In the **Users** menu, click **Manage Permissions**, and then click the **user name** to delete.
2. Click **Delete Permission**, and then click **Confirm** in the resulting popup.

Manage Groups

A group is comprised of a collection of users. By default, Security Groups load to the Spotfire Metrics Modeler when users are loaded from Active Directory.

Spotfire Metrics Modeler Group Management Tasks

- Adding group
- Editing group
- Deleting group

Adding a New Group

1. In the **Users** menu, click **Manage Groups**, and then click **Add New Group**.
2. Provide group name and alias.
3. Click on the **user names** to add to this group, and then click **Save**.

Editing a Group

1. In the **Users** menu, click **Manage Groups**, and then click the **group** to edit.
2. Click **Edit Group**.
3. Complete edits.
    - To add a user to the group, click the user name and it displays in the added users column.
    - To remove a user from the group, click the user name to move to the All Users column.
4. Click **Save**.

Deleting a Group

1. In the **Users** menu, click **Manage Groups**, and then click the **group** to delete.
2. Click **Delete**, and then click **Confirm** in the resulting popup

Manage Active Directory Group Syncs

Active Directory (AD) provides a central location for network administration and security. An AD domain controller authenticates and authorizes all users and computers in a Windows domain type network – assigning and enforcing security policies for all users. The following actions can occur during the AD group synchronization process:

- Remove an existing Spotfire Metrics user from a Spotfire Metrics Service security group.
- Add an existing Spotfire Metrics user to a Spotfire Metrics Service security group.
- Update an existing Spotfire Metrics user account's metadata (alias, first name, last name, primary telephone and primary e-mail address) if it has changed in Active Directory.

Spotfire Metrics Modeler Active Directory Group Sync Management Tasks

- Importing an AD group
- Editing an AD group
- Deleting an AD group

Importing a New Active Directory Group

1. In the **Users** menu, click **Import AD Group**. .
2. Provide the following information:
   - AD Group Name
   - Domain
   - Login Information
   - Sync Scheduler
3. Click **Save**.

Editing an Active Directory Group Sync

1. In the **Users** menu, click **Manage Groups**, click the group you want to edit and then click **Edit**.
2. Complete your changes, and then click **Save**.

Deleting an Active Directory Group Sync

1. In the **Users** menu, click **Manage Groups**
2. Click the group you want to edit, and then click **Delete**.
3. Click **Confirm** in the resulting popup

Spotfire Metrics Mobile Application Settings

The following settings are available for the Spotfire Metrics mobile application:

Setting	Description
Disable Cache	Spotfire Metrics Mobile app cache. (default = *false*)
Footer Content	Adjust the content displayed in the footer of the Spotfire Metrics application pages.

KPI Service URL	The Spotfire Metrics Service URL. (default = *http://localhost:29215*)
Login Screen Message	Adjust the text message you want your users to see when they log on to Spotfire Metrics application.
Require Terms	Show terms of use. (default = *false*)
Show Thresholds	Show the threshold color banding in trend charts. (default = *false*)
Sparkline Point	The number of data points shown on the Sparkline. (default = *0*, show all)
Terms of use	The text to show for the terms of use. (default = *This is the terms of use*)
Web Auto Refresh	Time in minutes for browser to refresh. (default = *10*)

Spotfire Metrics Web Application Settings

Setting	Description
Cache Expiration Time	Sets the timeout of the Web service cache. (*0* means never expires)
Cache Priority	When to remove an item based on memory. (*0* – never remove, *1* – remove if needed)
Database	The database's name. (default = *Spotfire Metrics EnterpriseLight*)
Excel Spreadsheet Path	Directory for Excel databases. (default = *C:MySpreadsheets*)
Failover	The failover server's name.
Integrated Security	Use integrated security? (default = *true*)
Metric Description Form	The form of metric description to use. Options are *long* or *short*. (default = *long*)
Metric Name Form	The form of metric name to use. Options are *long* or *short*. (default = *long*)
Password	If integrated security is set to *false*, please uncomment and populate value.
Schedule Enabled	How often to refresh users and groups from the database per User Update Interval. (default = *true*)
Server	The database server's name. (default = *localhost*)
Skip Active Directory Authentication	Skips user authentication again Active Directory. (default = *false*)

User	If integrated security is set to *false*, please uncomment and populate value.
User Update Interval	How often to refresh users and groups from the database in minutes.
Web Service Root	URL to the Web service.