



TIBCO Spotfire® Automation Services User's Guide

Software Release 10.10 LTS (10.10.6)

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TIBCO Documentation and Support Services

How to Access TIBCO Documentation

Documentation for TIBCO products is available on the TIBCO Product Documentation website, mainly in HTML and PDF formats.

The TIBCO Product Documentation website is updated frequently and is more current than any other documentation included with the product. To access the latest documentation, visit <https://docs.tibco.com>.

TIBCO Spotfire® Automation Services Documentation

Documentation for TIBCO Spotfire Automation Services is available on the [Spotfire Server Product Documentation page](#).

The following documents for this product can be found on the TIBCO Documentation site:

- *Spotfire® Automation Services User's Manual*
- *Spotfire® Automation Services API Reference*
- *Spotfire® Automation Services REST API Reference*

Release Version Support

Some release versions of TIBCO Spotfire products are designated as long-term support (LTS) versions. LTS versions are typically supported for up to 36 months from release. Defect corrections will typically be delivered in a new release version and as hotfixes or service packs to one or more LTS versions. See also https://docs.tibco.com/pub/spotfire/general/LTS/spotfire_LTS_releases.htm.

How to Contact TIBCO Support

Get an overview of [TIBCO Support](#). You can contact TIBCO Support in the following ways:

- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the TIBCO Support portal at <https://support.tibco.com>.
- For creating a Support case, you must have a valid maintenance or support contract with TIBCO. You also need a user name and password to log in to <https://support.tibco.com>. If you do not have a user name, you can request one by clicking **Register** on the website.

System Requirements for Spotfire Products

For information about the system requirements for Spotfire products, visit <http://spotfi.re/sr>.

How to join TIBCO Community

TIBCO Community is the official channel for TIBCO customers, partners, and employee subject matter experts to share and access their collective experience. TIBCO Community offers access to Q&A forums, product wikis, and best practices. It also offers access to extensions, adapters, solution accelerators, and tools that extend and enable customers to gain full value from TIBCO products. In addition, users can submit and vote on feature requests from within the [TIBCO Ideas Portal](#). For a free registration, go to <https://community.tibco.com>.

For quick access to TIBCO Spotfire content, see <https://community.tibco.com/products/spotfire>.

Overview

TIBCO Spotfire® Automation Services is a web service for automatically executing multi-step jobs within your TIBCO Spotfire® environment. You can, for example, use Spotfire® Automation Services to deliver an analysis file to specific people, in a particular format, at specified times.

The Automation Services feature includes the following components:

- The Spotfire Automation Services Job Builder, which comes with a set of pre-defined tasks for immediate job creation. The Job Builder is accessed from TIBCO Spotfire® Analyst. No installation is required, but all users must belong to the group Automation Services Users, and have the Automation Services Job Builder Tool license enabled.
- An API for developing custom tasks for the Job Builder.
- The **Automation Services** area of the administration interface for scheduling and executing jobs. For more information, see "Automation Services job scheduling" in the [Spotfire Server help](#).
- The Client Job Sender command-line tool for executing jobs. To install this tool, you download and extract the Spotfire Automation Services files from the TIBCO eDelivery website, and copy the files to a computer in your Spotfire implementation. For details, see [Installing the Client Job Sender](#).



When using the Client Job Sender, you can set the execution schedule by using Windows Task Scheduler.

Creating a job file

A Spotfire Automation Services job file is an XML file that is created in the Job Builder. It contains the set of tasks that are performed each time that the job runs, along with any relevant settings for each task.

Prerequisites

- To execute Spotfire Automation Services jobs on the server using the Job Builder or the Client Job Sender, a user must be a member of the group Automation Services Users.
- To run the Job Builder, a user must also have the Automation Services Job Builder Tool license enabled.
- Analysis files that are used in automation jobs must be in the Spotfire library.

For information on group membership, see the Spotfire® Server help. For information on licenses, see the help for Administration Manager in Spotfire® Analyst.

Procedure

1. Open Spotfire Analyst.
2. Click **Tools > Automation Services job builder**.
3. In the Job Builder, click **Add** and then click the first task in the job.

Any job that contains tasks involving an analysis file must begin with the Open Analysis from Library task.
4. To the right of the task list, in the Settings pane, adjust the task settings as necessary.
5. Repeat steps 3 and 4 until you have completed the task list and settings. For details on the available tasks and settings, see [Job Builder tasks](#).
6. Save the job file to the Spotfire library, or to a location of your choice.
7. Optional: If the job was saved to the library, you will see a dialog where you can click on a link and go to the server to create or edit a schedule for the job.

For more information about schedules, see the Spotfire® Server help.

Inserting a field in a Spotfire Automation Services job

To ensure that the Job Builder creates a new file each time that a particular job runs, you can add one or several fields, such as the automatically updated date and time fields, to the file name. You can also insert fields in other text areas, such as an email message that you create for sending a new file to its recipients.

Procedure

1. From Spotfire Analyst, open the Spotfire Automation Services Job Builder.
2. Open the job file to which you want to add a field.
3. In the Automation Services Job Builder dialog, place the cursor where you want to insert a field, either in the file name part of the destination path or in another text area.
4. Click **Tools > Insert Field**, and then select the field you want to add.

Duplicating tasks in a job

For Job Builder jobs that include executing a task repeatedly, such as opening several analyses and exporting each one to a PDF file, you can duplicate an existing task, including its settings, as many times as needed.

Prerequisites

You have created the first instance of the task.

Procedure

1. In the Automation Services Job Builder, in the left pane select the task that you want to duplicate.
2. Click **Duplicate**.
The new task appears directly below the original task in the task list.
3. Edit the new task as needed and move it to its correct spot in the task list.

Job Builder tasks

These are the tasks that are included in the Spotfire Automation Services Job Builder.

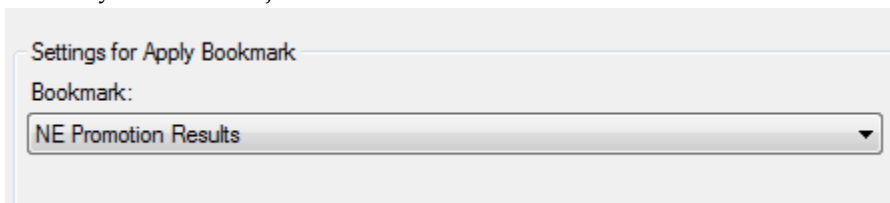
If your version includes different tasks, contact your Spotfire administrator for information on how to use those tasks.

Apply Bookmark

You can apply bookmarks to your job files to highlight certain aspects of a data set.

For example, you can use bookmarks if you have an analysis file with sales data for a department store and you want the manager of each department to receive a weekly update on their department.

You can create one job file for each department in the store, basing all the job files on the same analysis. If you then apply different bookmarks in each job file, each manager can receive a customized view of the analysis when the jobs are run.



Settings for Apply Bookmark

Bookmark:

NE Promotion Results

Option	Description
Bookmark	Specifies the bookmark to apply. All the bookmarks in the analysis are listed in the Bookmark list.

Automated library export and import

The tasks Export Library Items and Import Library Items have been deprecated in Spotfire Automation Services.




Instead of Export Library Items and Import Library Items, use the following commands on the Spotfire Server command line:

- `export-library-content`
- `import-library-content`




Details about these commands are available in the "Command-line reference" section of the Spotfire Server and Environment Installation and Administration help.

If you decide to use these deprecated tasks in Spotfire Automation Services anyway, these are the available settings:

Export Library Items

Option	Description
Export from library folder	Specifies the location and name of the folder to export from the library.  To export a folder and its contents to file you must have Browse + Access permissions for the folders you want to export. You must also be a member of the Library Administrator group.
Browse...	Opens the Browse Library dialog where you can locate the library folder from which you want to export items. Only available if you are connected to the library.
Export to file	Specifies a name for the file that will be created. The file will be saved as a zip archive on the server.  The format of the entire file name will be <code>fileName.part0.zip</code> . However, you should always specify the name without file name extensions such as <code>.part0</code> or <code>.zip</code> .  To include all the exported items, several zip archives may be created from one single export. The middle part of the file name will reflect this: <code>fileName.part0.zip</code> , <code>fileName.part1.zip</code> , <code>fileName.part2.zip</code> , and so on.
Export items of type	Specify the type of items you want to export if you want to limit the export to only a certain type.
Include permissions	Select whether or not to include the selected library folder permissions.




Import Library Items

Option	Description
Import from file	Specifies the name of the file to import. The file must be a zip archive containing appropriate library content.  The format of the entire file name is <code>fileName.part0.zip</code> . However, you should always specify the name without any file name extensions such as <code>.part0</code> or <code>.zip</code> .  If the zip archive is located in a subfolder to the Shared disk location folder you must provide the subfolder name as well. Example: <code>subfolderName/fileName</code> .  To import a folder and its contents to file you must have Browse + Access + Modify permissions for the destination folder. You must also be a member of the Library Administrator group.
Import to library folder	Specifies the location and the name of the folder in the library to which you want to import the library items.
Browse...	Opens the Browse Library dialog where you can select the folder in the library to which you want to import. Only available if you are connected to the library.

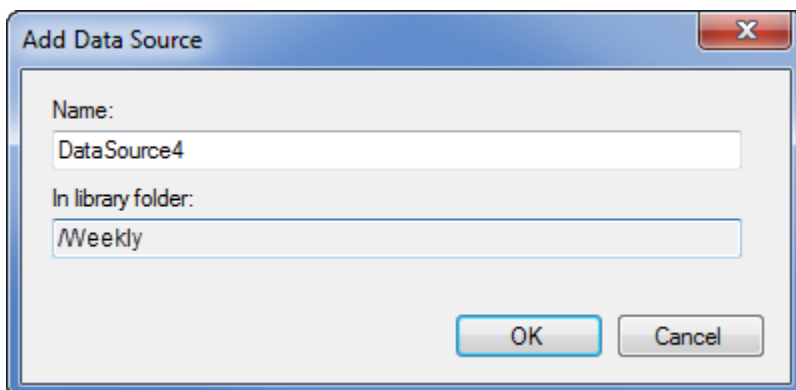
Option	Description
Import items of type	Specify the type of items you want to import if you want to limit the import to only a certain type of items.
Include permissions	Select this check box if you want to include permissions, if such are stored in the file. If you do not include any permissions, the imported items will inherit the permissions of the destination folder.
Ignore empty folders	Select this check box if you do not want to import any empty library folders.

Remap Data Sources

When you migrate library items from one system to another, it is likely that you will have to remap the connection strings and/or passwords of the data sources when you import them to the new system.

Option	Description
X.509 certificate subject	<p>Select a valid X.509 certificate. This is used to protect the security of the passwords used to connect to data sources when exporting and importing them. The valid certificates that are installed locally on your computer are listed in the drop-down list.</p>  <p>The selected certificate must also be installed on the node that runs the Automation Services jobs.</p>
Data sources library folder	<p>Defines the location of the library folder that contains the data sources to be remapped.</p>  <p>This is optional. However, if you do not specify a library folder, you must include the entire path for each data source that you add.</p>
Browse	Opens the Browse Library dialog where you can select a library folder. Only available if you are connected to the library.
Data sources	<p>Lists the currently added data sources.</p>  <p>If you have not specified a Data sources library folder, you must include the entire path for each data source that you add.</p>
Add	Opens a dialog where you can specify a new data source. See below
Edit	Opens a dialog where you can edit the selected data source. See below.
Remove	Removes the selected data source from the list.
Import	Opens a dialog where you can select a previously exported file. All the data sources that are included in the file will be added to the list.
Connection string	Specifies the current connection string for the selected data source. To change it, enter a new connection string in the text field.
Reset	Resets the modified connection string to the one that was originally set for the selected data source.
Password	The current password for the selected data source.
Change	Opens a dialog where you can enter a new password for the selected data source.

Option	Description
Reset	Resets the modified password to the one that was originally set for the data source.



Option	Description
Name	Enter a name for the new or edited data source.
In library folder	Displays the location and name of the library folder that contains the data source.

Export Data Table to Library

You can export a data table from an analysis file and save it to the library as a Spotfire Binary Data File (SBDF).

If you want to make sure that the data table is saved as a new data table each time that the job is executed, you can add the date to the file name; for more information, see [Inserting a field in a Spotfire Automation Services job](#).



Settings for Export Data Table to Library

Data Table:
SalesAndMarketing

Library Path:
/DataTables/Store Sales example data table

Description
Store Sales data table

Keywords (separated by semicolons):
store;sales;export

Option	Description
Data Table	Select the data table that you want to export from the analysis file.
Library Path	Specify the library path and file name for saving the data table.
Description	Add a description for the data table.  If the data table already has a description, it is displayed here.
Keywords	Add keywords for the data table, separated by semicolons.  If the data table already has specified keywords, they are displayed here.

Export Data to File

You can export the data from a data table, or a tabular visualization, and save it as a file on disk.

If you want to make sure that the data table is saved as a new data table each time that the job is executed, you can add the date to the file name; for more information, see [Inserting a field in a Spotfire Automation Services job](#).

Settings for Export Data to File

Export data from:

☐ Visualization:

Start Page - Details Plot

☒ Data table:




Data Table

Export data as:

Microsoft Excel Workbooks: *.xlsx

Export data to:

C:\Temp\MyData {yyyyymmdd}.xlsx

Option	Description
Export data from	Select a tabular visualization or a data table to export data from.
Export data as	Select the file format the data should be saved as. <div>  <p>Data exported from a cross table, summary table or graphical table can only be saved as a tab separated Spreadsheet file.</p> </div>
Export data to	Select where to save the exported data. <div>  <p>The file will be saved to the node executing the job. Therefore you must make sure that the folder you select as destination folder actually exists on that computer, and that you have writing permissions for the selected folder.</p> </div> <div>  <p>Allowed file paths may be limited by the <code>allowedFilePaths</code> setting in the <code>Spotfire.Dxp.Worker.Automation.config</code> file. For more information, see the Spotfire Server and Environment Installation and Administration help.</p> </div>

Export Image

You can export an image from an analysis file to a destination of your choice.

If you want to make sure that the image is saved as a new data table each time that the job is executed, you can add the date to the file name; for more information, see [Inserting a field in a Spotfire Automation Services job](#).

Settings for Export Image

Destination path:
C:\temp\Sales.png




Visualization:
Page : Sales and Marketing

☒ Hide preview images in list

Width (pixels):
1378

Height (pixels):
730

☒ Maintain aspect ratio

Option	Description
Destination Path	<p>Specify the location (on the node running Automation Services) and file name of the exported image.</p> <p> The file will be saved to the node executing the job. Therefore you must make sure that the folder you select as destination folder actually exists on that computer, and that you have writing permissions for the selected folder.</p> <p> Allowed file paths may be limited by the <code>allowedFilePaths</code> setting in the <code>Spotfire.Dxp.Worker.Automation.config</code> file. For more information, see the Spotfire Server and Environment Installation and Administration help.</p>
Visualization	<p>Specify the visualization to export.</p> <p> The exported image only includes the currently visible content.</p>
Hide preview images in list	Select to disable rendering of images in visualization list. This significantly improves response time if there are many available visualizations in the analysis.
Width	Specify the width, in pixels, that the exported image should have.
Height	Specify the height, in pixels, that the exported image should have.
Maintain aspect ratio	Select this check box to make sure that the aspect ratio of the exported image is the same as the current ratio of the visualization in the analysis.

Export Report to PDF

You can prepare a report of an analysis and export it to a PDF file that is saved to a destination of your choice on the computer running Spotfire Automation Services.





The Export Report to PDF task replaces the Export to PDF task. The settings that were made in the Export to PDF task are included in the report itself. To learn how to prepare reports, see the Spotfire Analyst help.

If you want to make sure that the document is saved as a new file each time the job is executed, you can add a field to the file name; for more information, see [Inserting a field in a Spotfire Automation Services job](#).

Settings for Export Report to PDF

Destination path:
C:\My Sales Data\My File Name{date}.pdf Browse...

Report name:
Region West

Option	Description
Destination path	<p>Specify the location (on the computer running Spotfire Automation Services) and file name of the exported PDF file.</p> <div>  <p>The file will be saved to the node executing the job. Therefore you must make sure that the folder you select as destination folder actually exists on that computer, and that you have writing permissions on the selected folder.</p> </div> <div>  <p>Allowed file paths may be limited by the <code>allowedFilePaths</code> setting in the <code>Spotfire.Dxp.Worker.Automation.config</code> file. For more information, see the Spotfire Server and Environment Installation and Administration help.</p> </div>
Report name	Select the report to export. All prepared reports of the analysis are available in the drop-down list.

Export to PDF

The task Export to PDF has been deprecated in Spotfire Automation Services.

Instead of Export to PDF, use the task [Export Report to PDF](#).

If you decide to use the deprecated task in Spotfire Automation Services anyway, see the following information.

Export to PDF

You can export parts of an analysis to a PDF file, and save the file to a destination of your choice on the computer running Spotfire Automation Services. You can choose between two types of PDF export:

- Export selected visualizations or pages as they currently appear in the analysis.
- Export based on bookmarks.

With bookmarks export, you can export all the bookmarks of interest, in one single export operation and to one single document. Each of the bookmarks will automatically be applied in turn during the export, and the resulting PDF document will contain one version of the analysis (or parts of it) for each bookmark.

If you want to make sure that the document is saved as a new file each time the job is executed, you can add a field to the file name; for more information, see [Inserting a field in a Spotfire Automation Services job](#).

General tab

Settings for Export to PDF

General Advanced Bookmarks

Destination path:

Export what:

☒ Use entire page

Include

☒ Visualization title

☐ Description

☐ Filter Settings

☒ Page title

☒ Trellis panels and table rows not visible on screen



☒ Annotations






Options


Page layout:

Margins

Left: Top: Right: Bottom:

Option	Description
Destination Path	<p>Specify the location (on the computer running Spotfire Automation Services) and file name of the exported PDF file.</p> <div>  <p>The file will be saved to the node executing the job. Therefore you must make sure that the folder you select as destination folder actually exists on that computer, and that you have writing permissions on the selected folder.</p> </div> <div>  <p>Allowed file paths may be limited by the <code>allowedFilePaths</code> setting in the <code>Spotfire.Dxp.Worker.Automation.config</code> file. For more information, see the Spotfire Server and Environment Installation and Administration help.</p> </div>

Option	Description
Export what	<p>Define which parts of the analysis to export. For more information about what the options in this drop-down list mean for the different export types, see the following topics in the Spotfire Analyst help: "Exporting to PDF" and "Exporting Bookmarks to PDF".</p> <div>  <p>If you export bookmarks, then the PDF file will contain one set of PDF pages for each bookmark. For example, if you export three bookmarks and select All pages, then you will get a PDF document containing all the pages in the analysis times three (that is, one set of all analysis pages for each of the bookmarks). The descriptions of the drop-down list options below are based on regular export where each page or visualization appears only once in the resulting PDF.</p> </div>
Active visualization	<p>Exports the active visualization in the analysis (or in the bookmark, for bookmark export) to a single page in a PDF document.</p> <div>  <p>Tables and trellised visualizations may be extended to more than one page.</p> </div>
Active page	Exports all the visualizations on the active page in the analysis (or in the bookmark, for bookmark export) to a single page in a PDF document.
Active page (new page for each visualization)	<p>Exports all the visualizations on the active page in the analysis (or in the bookmark, for bookmark export) to one or more pages in a PDF document. Each visualization on the active page will be exported to a new page in the PDF document.</p> <div>  <p>Tables and trellised visualizations may be extended to more than one page.</p> </div>
All pages	Exports all the visualizations on all the pages in the analysis. Each page will be exported to a new page in the PDF document.
All pages (new page for each visualization)	<p>Exports all the visualizations on all the pages in the analysis. Each visualization in the analysis will be exported to a new page in the PDF document.</p> <div>  <p>Tables and trellised visualizations may be extended to more than one page.</p> </div>
Details-on-Demand	Exports the Details-on-Demand to one or more pages in a PDF document. Select the check box Trellis panels and table rows not visible on screen if you want to export all the data in Details-on-Demand, including data that is not visible.
Use entire page	When exporting to PDF from Automation Services, this option is not applicable because the exported parts of the analysis do not have any proportions when the user interface is not available. Therefore, the result will always be that the exported parts of the analysis are redrawn to fill the entire space of the selected page layout.
Include	
Visualization title	Indicate whether you want the page titles to be included in the export.
Description	<p>Indicate whether you want hidden visualization descriptions to be included in the export. The description will only be visible for visualizations where a description has been entered. If the description is visible in the visualization or legend, it will automatically be included in the export as a part of the visualization.</p> <div>  <p>A long description may be cut off when you export to PDF.</p> </div>

Option	Description
Filter settings	Indicate whether you want the filter settings to be included in the export as textual information. Only the values of the modified filters will be listed.
Page title	Indicate whether you want the page titles to be included in the export.
Trellis panels and table rows not visible on screen	<p>Indicate whether to include non-visible data in trellis panels and tables in the export. If a table contains too many rows to fit on one page in the PDF document, it will be extended to the following pages. Similarly, a trellised visualization with many panels will be extended to the following pages.</p> <div>  <p>Not available if you select to export Active page or All pages. You must select an option where each visualization is exported to a new page.</p> </div>
Page layout	Define the size and orientation of the pages in the resulting PDF document.
Margins	Define the margins of the page, in pixels.

Advanced tab

Settings for Export to PDF

General Advanced Bookmarks

Graphical settings

Items to export:

Name	Graphics mode
Brand Share Change v...	Vector

All Vector Graphic

All Raster Graphic

Raster graphics quality (5.0 highest): 5.0

Header options

☒ Enable page header Header height: 25

Left: Custom text Center: Custom text Right: Custom text


Font Settings... Microsoft Sans Serif (8.25)



Footer options

☒ Enable page footer Footer height: 25

Left: Custom text Center: Custom text Right: Custom text

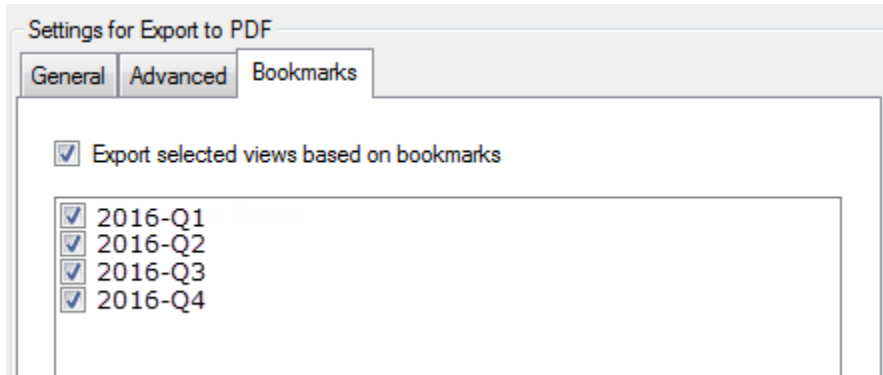
Font Settings... Microsoft Sans Serif (8.25)

Option	Description
Graphics settings	
Items to export	Lists the parts of the analysis to include in the export. The items in the list may refer to pages, visualizations, or the Details-on-Demand, depending on the selection that you made under Export what on the General tab.
Name	Shows the names of the pages or visualizations to export.
Graphics mode	<p>Here you can change which graphics mode each item will be exported as: Vector or Raster. This can be useful if you must keep the file size down.</p> <div>  <p>Using raster graphics does not always result in a smaller file size, but if the file becomes very large when exporting as vector graphics, you can try exporting as raster graphics instead.</p> </div>

Option	Description
All Vector Graphic	<p>Click this button to set all the items in the list to be exported using vector graphics.</p>  <p>3D scatter plots are always exported as raster graphics.</p>
All Raster Graphic	Click this button to set all the items in the list to raster graphics.
Raster graphics quality	<p>Here you can specify the quality of the export for parts of the analysis that will be exported as raster graphics. This can be useful if you need to keep the file size down. You can specify a value from 1.0 to 5.0, where 1.0 is the lowest quality and will result in a smaller file size.</p>  <p>Using raster graphics will always result in lower quality than vector graphics, even if you set the raster graphics quality to the highest possible value. However, using raster graphics does not always result in a smaller file size.</p>
Header options	
Enable page header	Select this check box if you want to include a header on each page in the resulting PDF document.
Header height	Enter a number between 10 and 100 to adjust the height of the header.
Left, Center, Right	<p>Make a selection from each drop-down list to specify the position of the header content, and what to include in the header. The following options are available:</p> <ul style="list-style-type: none"> • Custom text (enter the text of your choice in the field below the drop-down list) • Page number • Current date • Current date and time
Font Settings	Specify font, style, and size for the header. The current font settings are displayed to the right of the button
Footer options	
Enable page footer	Select this check box if you want to include a footer on each page in the resulting PDF document.
Footer height	Enter a number between 10 and 100 to adjust the height of the footer.
Left, Center, Right	<p>Make a selection from each drop-down list to specify the position of the footer content, and what to include in the footer. The following options are available:</p> <ul style="list-style-type: none"> • Custom text (enter the text of your choice in the field below the drop-down list) • Page number • Current date • Current date and time
Font Settings	Specify font, style, and size for the footer. The current font settings are displayed to the right of the button.

Bookmarks tab

The **Bookmarks** tab is used only when you want to export different views of the analysis, which are defined by selected bookmarks. When you select this option, each of the bookmarks is automatically applied in turn, and the resulting PDF file contains one version of the analysis (or parts of it) for each bookmark. See "Exporting Bookmarks to PDF" in the Spotfire Analyst online help for more information about the result of exporting based on bookmarks.

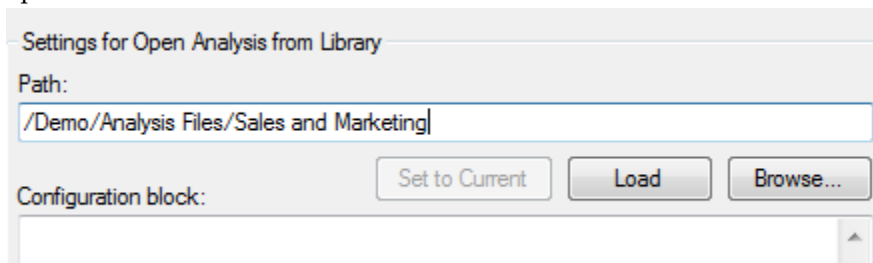


Option	Description
Export selected views based on bookmarks	Select this check box to enable export to a PDF file based on bookmarks. Choose which parts of the analysis to export on the General tab.
[List of available bookmarks]	Select the bookmarks you want to export.


Open Analysis from Library

A job generally starts with a task that opens an analysis file. The job is then based on this file, and all the tasks are performed on this file.

If you want to use an analysis file that is already open in Spotfire, you can click **Set to Current**. If you have opened a job file that is based on an analysis file that is not currently open, you can click **Load** to open that file in Spotfire. You can use a configuration block to configure the initial state of the analysis file that you want to open, such as applying a bookmark, or setting a filter to the analysis before it is opened.



Option	Description
Path	Indicate the location and file name of the file to open. Click Browse to navigate to the file, or use the Set to Current option.
Set to Current	Click this button to set the path to the analysis that is currently open in Spotfire.

Option	Description
Load	<p>Opens the analysis that is specified in the Path field.</p> <div>  <p>If the Open Analysis from Library task is preceded by the Set Data Source Credentials task or the Set Credentials for External Connection task, it is not possible to load the file using this button. It is therefore not possible to edit any following tasks, for example the Export Image task, either. To be able to do this, open the file from the File menu in Spotfire Analyst before proceeding with setting up additional tasks.</p> </div>
Configuration block	<p>Optionally, use this advanced feature to provide a configuration block to specify the initial state of the analysis. A configuration block is a piece of code that defines, for example, which page is active in the analysis when the analysis is opened, or applies a specific bookmark when the analysis is.</p> <p>Example:</p> <pre>SetPage(pageTitle = "Overview"); ApplyBookmark(bookmarkName = "UserRegionOnly");</pre>

Replace Data Table

You can replace the contents of a data table with the contents of an SBDF file stored in the library, or, with a prompted information link.

Settings for Replace Data Table

Data table to replace:
Sales and Marketing

☐ SBDF library path:
[Text field] [Browse button]

☒ Information link library path:
/Users/Sales and Cost [Browse button]


Information link parameters:

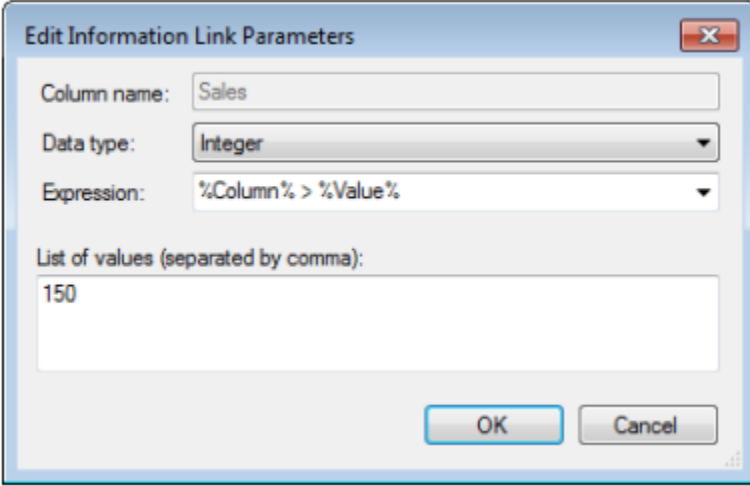
Column Name	Data Type	Expression	Values
Sales	Integer	%Column%<%	150

[Edit... button]

For an information link, you can specify parameters for the information link to filter by. For example, you can set the task to show only the column values that are greater than a specified value, or the values between two specified values.

Option	Description
Data table to replace	Specify the data table that you want to replace with an information link.
SBDF library path	Indicates the path to the selected SBDF file in the library. Click on the button next to the field to browse for a file.

Option	Description
Information link	<p>Indicates the path to the selected information link. Click on the button next to the field to browse for an information link.</p> <div>  <p>The information link must have prompts in order to be useful. If you want to use parameterized information links instead, you can specify that in a configuration block when you open the analysis from the library; see Open Analysis from Library. To learn more about using information links, see the Spotfire Analyst help.</p> </div>
Information link parameters	Lists the columns with parameters of the selected information link.
Edit	Opens the Edit Information Link Parameters dialog (shown below) where you can set parameters for the selected column.



Option	Description
Column name	Displays the name of the column for which you are currently editing parameters.
Data type	Set the data type of the column.
Expression	Set the expression that indicates how the column value should be compared to the values set in this dialog, and thus how the data is filtered.
List of values	List the values by which you want to filter. The values that you enter here will replace the %Value% in the selected expression above.

Save Analysis to Library

This task saves the analysis to a location of your choice in the library.

To save a unique analysis each time that the job runs, instead of replacing the existing one, you can add a field to the file name; for more information, see [Inserting a field in a Spotfire Automation Services job](#).

Settings for Save Analysis to Library

Save as:
/users/jdoe/Sales Data {date}

☒ Embed data in analysis Set to Current

☒ Remove any previously existing bookmarks

Description:
Daily sales data for {date}.

Option	Description
Save as	Specify the location and name of the file that will be saved.
Set to Current	Click to use (in the Save as field) the path of the currently open document.
Embed data in analysis	Select this check box to embed the data in the analysis.
Remove any previously existing bookmarks	Select this check box to delete any previously existing bookmarks when the analysis is saved to the library. Note that if you select this check box, bookmarks that have been added by other users will be removed
Description	Optionally, type a description of the analysis.
Keywords (not shown in image)	Optionally, type one or more keywords specific to the contents of the analysis.

Send Email

A job can be set up to send an email to a number of recipients when it is executed.

You can write a message with included images, attach an analysis or a file, and add links to the web clients and library.



To enable this task, you must add SMTP settings to the `Spotfire.Dxp.Worker.Automation.config` file; for instructions, see [Adding SMTP settings to the Spotfire.Dxp.Worker.Automation.config file](#).

Settings for Send Email

To:

Cc:

Bcc:

From:

Subject:

Message:

☒ Add library link:



☒ Add web client link:

☒ Attach analysis (with embedded data)

Attached visualization images:

Attached files:

Option	Description
To	Type the email addresses to which the email should be sent. The separator to use depends on the regional settings of your computer.
Cc	Type the email addresses to which a copy of the email should be sent.
Bcc	Type the email addresses to which a hidden copy of the email should be sent.
From	Type the email address from which the email should be sent. If the From-address for a job is unspecified, then the email address from the configuration file will be used.
Select	Click to open a dialog where you can select recipients from your LDAP directory. This only works if you have an LDAP directory.
Subject	Enter a subject for the email.

Option	Description
Message	Enter the body text of the email.
Add library link	<p>Select the check box to include a link to the analysis in the library.</p> <p>Optionally, enter text for the link in the text box, such as "Click to open analysis from the library." If you leave the field blank, the link is shown as the actual path to the library.</p>
Add Web Player link	<p>Select this check box to include a link to the analysis in the web client.</p> <p>Optionally, enter text for the link in the text field. If you leave the field blank, the link is shown as the actual path.</p>
Attach analysis (with embedded data)	Select this check box to attach the analysis to the email.
Attached visualization images	You can include images from visualizations in the email. The images will be shown in the message body. The data will be embedded in the email. See the Add Visualization dialog below this table.
Add...	Open to select the visualization images to add.
Edit	Edit the settings for an added image.
Remove	Removes the selected image from the list.
Attached files	You can include files in the email, for example a PDF created by the Export Report to PDF task.
Add...	<p>Opens the Select File Attachment dialog, where you select the file to attach, specify the name of the attachment, and select if the file should be deleted after the email has been sent.</p> <div>  <p>Only select to delete the file if you are absolutely sure that the file should be deleted after the email has been sent. It is recommended to only delete temporary files, such as PDF files created by the Export Report to PDF task for the sole purpose of being sent out in an email. To avoid deleting files that should be saved, files can only be deleted if they have a create or modification time in the last 30 minutes. The time can be changed in the <code>allowDeleteOfFilesModifiedLastMinutes</code> setting in the <code>Spotfire.Dxp.Worker.Automation.config</code> file.</p> </div> <div>  <p>Allowed file paths may be limited by the <code>allowedFilePaths</code> setting in the <code>Spotfire.Dxp.Worker.Automation.config</code> file. For more information, see the Spotfire Server and Environment Installation and Administration help.</p> </div>
Edit	Edit the settings for an added attachment.
Remove	Removes the selected attachment from the list.

Add Visualization

Visualization:
Demographic Analysis : Sales by 3-Digit Zip

☐ Hide preview images in list

Width (pixels):
1352

Height (pixels):
869



☐ Maintain aspect ratio

☐ Add visualization title as text above the image

☐ Hide visualization title from the image

Add extra line breaks above image:
0

OK Cancel

Option	Description
Visualization	Select the visualization image that you want to appear in the email.
Hide preview images in list	If the check box is selected, the list of visualizations directly above the check box does not display previews for each visualization. This reduces download time.
Width	You can change the height and width of the image. Select the Maintain aspect ratio check box to keep the image's original proportions.
Height	
Maintain aspect ratio	
Add visualization title as text above the image	<p>If the check box is selected, the title of the visualization, followed by a colon, appears just above the visualization. This is the default.</p> 
Hide visualization title from the image	<p>If the Show title bar check box is selected in the visualization Properties dialog, select this check box to prevent the visualization title from appearing in the upper-left corner of the image.</p> <p>This is the visualization title appearing within the image:</p> 
Add extra line breaks above image	Select this check box to add space above the image in the email message.

Adding SMTP settings to the Spotfire.Dxp.Worker.Automation.config file

When you add the Send Email task to a Spotfire Automation Services job, you must also manually add the SMTP settings to the `Spotfire.Dxp.Worker.Automation.config` file and assign the new configuration to a service running Automation Services.

Prerequisites

You must have administrative credentials for Spotfire Server.

Procedure

1. On the computer running Spotfire Server, open a command line as an administrator and change the directory to the location of the `config.bat` file (`config.sh` on Linux). The default location is `<server installation directory>\tomcat\spotfire-bin`.
2. On the command line, export the service configuration that you want to modify from Spotfire Server by using the **export-service-config** command. Specify the service's capability and the deployment area, and optionally the configuration name.



By default, all new services receive a "Default" configuration. The properties of the default configuration cannot be changed, but you can edit the configuration files and save the resulting configuration with a new name.



If you are editing a service configuration that has been applied to an existing service, you must verify the name of the active service configuration before you export it. If the name of the active configuration is not "Default", you must specify the name in the **export** command. To find the name of the active service configuration, see "Viewing the name of the active service configuration" in the Spotfire Server help.

Example for exporting the "Default" Spotfire Automation Services configuration that is in the Production deployment area:

```
config export-service-config --capability=AUTOMATION_SERVICES --deployment-
area=Production
```

Example for exporting a customized configuration:

```
config export-service-config --capability=AUTOMATION_SERVICES --deployment-
area=Production --config-name=AutomationServicesConfiguration
```

The configuration files are exported. By default, these files are saved to the `<server installation directory>\tomcat\spotfire-bin\config\root` directory.

3. Open the `Spotfire.Dxp.Worker.Automation.config` file in a text editor or XML editor, and locate the following section:

```
<preferences>
  <!-- SMTP Host for Email Notification -->
  <add name="Spotfire.Automation.SendMail.SMTPHost" value="smtp.company.com" />
  <!-- From Address for Email Notification -->
  <add name="Spotfire.Automation.SendMail.FromAddress"
value="TsasService@company.com" />
  <!-- Timeout (seconds) for the library import operation for the Import Library task
-->
  <add name="Spotfire.Automation.LibraryImport.TimeoutInSeconds" value="300" />
  <!-- Timeout (seconds) for the library export operation for the Export Library task
-->
  <add name="Spotfire.Automation.LibraryExport.TimeoutInSeconds" value="300" />
</preferences>
```

4. Edit the following two settings:

- Replace the value of `Spotfire.Automation.SendMail.SMTPHost` with the SMTP host for email notification.
- Replace the value of `Spotfire.Automation.SendMail.FromAddress` with the From address for email notification.



For information on other Automation Services settings that you can configure, see the topic "Spotfire.Dxp.Worker.Automation.config" in the Spotfire Server help.

5. On the command line, import the customized configuration file back into Spotfire Server and name the configuration by using the `import-service-config` command.



If the configuration to be imported was created from the default configuration, a new name *must* be specified.



Importing customized configuration files without the `--config-name` parameter overrides the default configuration.

```
config import-service-config --config-name=ServiceConfiguration
```

6. Optional: On the command line, assign the created configuration to an existing Automation Services service:

```
config set-service-config --service-id=value --config-name=ServiceConfiguration
```



Use the `list-services` command to obtain the service ID.



Alternatively to step 6, you can assign the new configuration to a service by editing the service in the **Nodes & Services** section of the server's administration interface .

Set Credentials for External Connection

To open an analysis that requires authentication for external data sources (that is, any analysis that uses Spotfire data connectors), use this task to specify the credentials.

The way that you set credentials with this task is not the same as using a regular credentials profile.



Usually, credentials profiles are stored in the web service configuration file `Spotfire.Dxp.Worker.Host.exec.config`. This is a complementary way of storing and setting credentials, that you can use if you cannot store a credentials profile in the web service configuration.

This task should be performed before any "Open Analysis from Library" task. To secure the login credentials, you must encrypt them using an X.509 certificate. Note that you need to add one Set Credentials for External Connection task for each credentials profile. The credentials profiles are used to connect a username and password to an external data source that is used in a specific analysis.




Settings for Set Credentials for External Connection

X.509 certificate subject:
 CN=Jane Doe, O=Acme, L=-, S=-, C=SE

Credentials profile:
 my profile

Username:
 sa

Password:
 ●●●●●●●●

Option	Description
X.509 certificate subject	<p>Select a valid X.509 certificate. This is used to protect the security of the passwords that are used to connect to the external data sources. The valid certificates that are installed locally on your computer are listed in the drop-down list.</p> <p> The selected certificate must also be installed on the node that runs the Automation Services jobs.</p>
Credentials profile	<p>Select the name of the credentials profile. Make sure that the profile matches a profile that is saved in the analysis file. The profile that is used in an analysis is saved in the Data Connection Properties dialog in Spotfire.</p>
Username	<p>Enter the username for the profile to use when connecting to the data source.</p> <p> Username is mandatory.</p>
Password	<p>Enter the password for the profile.</p> <p> Password is mandatory.</p>

Set Data Source Credentials

To open an analysis or information link that requires data source authentication, use this task to specify the credentials.

This task should be performed before any Open Analysis from Library or Replace Data Table with Information Link tasks. To secure the login credentials, you must encrypt them using an X.509 certificate. Note that you must add one Set Data Source Credentials task for each data source that requires authentication.


Settings for Set Data Source Credentials

X.509 certificate subject:
 CN=CertName

Data source:
 Sales

Username:
 MyUserName

Password:

Option	Description
X.509 certificate subject	<p>Select a valid X.509 certificate. This is used to protect the security of the passwords used to connect to data sources. The valid certificates that are installed locally on your computer are listed in the drop-down list.</p> <p> The selected certificate must also be installed on the node that runs the Automation Services jobs.</p>
Data source	Select the data source for which you are setting credentials.
Username	Enter the username to use when connecting to the specified data source.
Password	Enter the password.

Update Text Area Contents


If the analysis has text areas, you can set up the job file to replace the contents of these text areas.

You can also insert time and date by using the **Insert Field** option on the **Tools** menu; for more information, see [Inserting a field in a Spotfire Automation Services job](#).

Settings for Update Text Area Contents

Text Area to Update:
 Intro : Text Area

New Content:
 This analysis contains the sales data for {date}.

Option	Description
Text Area to Update	Select the text area to change.
New Content	<p>Enter the new content for the text area in this field.</p> <p> The new content will completely replace any older content.</p>

Job file testing

After you set up a job file, you should always make sure that it works as expected by executing it locally before you run it on a server. When you have checked that it works both locally and on the server, you can set it up to run regularly with a task scheduler.

Testing a job file locally

After setting up a job file, test it locally and then on the server.

Procedure

1. In the Job Builder, open the file that you want to test.
2. Click **Tools > Execute Locally**.
If the job does not include the task Send Email, go to step 5. If the job includes Send Email, continue to step 3.
3. In the first dialog that opens, enter the name of your SMTP host and then click **OK**.
4. In the second dialog that opens, enter the sender address and then click **OK**.
5. Check that all the tasks were executed as expected, and then test the job on the server.

Testing a job file on Spotfire Server

After testing your Spotfire Automation Services job locally, test it on Spotfire Server.

Prerequisites

To execute jobs on the server, you must be part of the group Automation Services Users.

Procedure

1. In the Job Builder, open the file that you want to test.
2. Click **Tools > Execute on Server**.
3. When the job has finished, check that all the tasks were executed as expected.

Job execution

After you create a job using the Spotfire Automation Services Job Builder, you can schedule the job to run periodically from the Automation Services area of the administration interface. Alternatively, you can use the Client Job Sender and Windows Task Scheduler to set up periodic job execution.

For details on using the administration interface, see "Automation Services job scheduling" in the Spotfire Server [Installation and Administration help](#).

To use the Client Job Sender and Windows Task Scheduler, begin by installing the Client Job Sender.

Installing the Client Job Sender

The Spotfire Automation Services Client Job Sender is installed by copying two files from the Automation Services package.



Rather than installing and configuring the Client Job Sender and then working in Windows Task Scheduler, you can schedule your job to run periodically from the Spotfire administration interface. For details, see "Automation Services job scheduling" in the [Spotfire Server help](#).

Prerequisites

- You have access to the Automation Services package that was downloaded from the TIBCO eDelivery website.
- The computer on which you plan to install the Job Sender has the .NET Framework version that is required for the installed Spotfire Analyst client.

Procedure

- From the Automation Services package, copy the following two files to any folder on a computer in your Spotfire environment, or in the specific site if the environment includes sites. The files must reside in the same folder.
 - `Spotfire.Dxp.Automation.ClientJobSender.exe`
 - `Spotfire.Dxp.Automation.ClientJobSender.exe.config`

What to do next

[Configuring the Client Job Sender](#)

Authentication options for the Client Job Sender

The Spotfire Automation Services Client Job Sender must be configured for authentication to the Spotfire Server.

These are the available authentication methods for the Client Job Sender. In most cases, administrators configure the same authentication method that is used in their Spotfire environment, or in a particular site.

- Username and password
- Kerberos
- NTLM
- X.509 client certificates
- OAuth2



If your company uses a web-based authentication method such as OpenID Connect, you must configure OAuth2 authentication for the Client Job Sender; for instructions, see [Configuring the Client Job Sender for OAuth2 authentication](#).

Otherwise, OAuth2 can be implemented for the Client Job Sender regardless of the authentication method used in your environment. This could be advantageous in situations such as the following:

- Because the OAuth2 client can only be used to execute jobs, you may choose this method for security reasons.
- The administration structure at your company may make it more convenient to use OAuth2 authentication, for example if the Active Directory is updated in a different department.

Configuring the Client Job Sender



The configuration file `Spotfire.Dxp.Automation.ClientJobSender.exe.config` is a standard XML configuration file. It is used to configure authentication to the Spotfire Server, and the logging and handling of communication with Spotfire Server.


Prerequisites

If you plan to configure OAuth2 authentication to the server, an administrator must first run a command on the Spotfire Server command line; for instructions, see [Configuring the Client Job Sender for OAuth2 authentication](#).

Procedure

- Open the configuration file in an XML editor or a text editor, and edit the following settings as necessary:

Setting	Description
<code>Spotfire.Server.RequestTimeoutSeconds</code>	Specify the maximum number of seconds for a single request to the Spotfire Server. The default value is 600.
<code>Spotfire.MaxJobExecutionTimeSeconds</code>	<p>Specify the maximum number of seconds that a job can run before the application cancels the job. If set to 0 or less, the application will not cancel the job. The default value is -1.</p> <div>  <p>If the <code>async</code> flag is used on the command line when running a job, this setting is ignored.</p> </div> <div>  <p>The specified value in the Spotfire Server setting <code>max-job-execution-time</code> will also affect the cancellation of the job. The lowest specified time will decide when the job is cancelled. For details on this setting, see the Spotfire Server and Environment Installation and Administration help.</p> </div>
<code>Spotfire.Logging.Level</code>	Specify the logging level for the client job execution. The log file <code>Spotfire.Dxp.Automation.ClientJobSender.exe.log</code> is located in the same directory as the Client Job Sender files. The default value is INFO.

Setting	Description
<code>Spotfire.AllowedCertificateValidationErrors</code>	If SSL is enabled on the Spotfire Server, certificate errors can be suppressed by this client by changing this setting. Set to None to allow no certificate errors. To allow specific errors, set the value to any or all of these values, separated by commas: RemoteCertificateChainErrors, RemoteCertificateNameMismatch, RemoteCertificateNotAvailable.
<code>Spotfire.AllowedTlsVersions</code>	Specify the TLS protocol version to use when communicating with the TSS server. If multiple values are used, they should be separated by comma. Possible values are: Ssl3, Tls, Tls11, Tls12. If the setting is left empty it will use the default system (machine) settings.
<code>Spotfire.Authentication.Basic.UserName</code>	Specify the username for logging in to Spotfire Server, when Spotfire Server is set up with username and password authentication. This can also be used when the server is configured with NTLM or Kerberos if another user than the one executing the process is to be used when accessing Spotfire Server. (The domain must be included in username.)  This user must be a member of the group Automation Services Users.
<code>Spotfire.Authentication.Basic.Password</code>	The password for the specified username.
<code>Spotfire.Authentication.ClientCertificate.Enabled</code>	Set to True if Spotfire Server requires a client certificate.
<code>Spotfire.ClientCertificate.StoreLocation</code>	The store location for the installed X.509 client certificate used to authenticate with Spotfire Server. Can be CurrentUser or LocalMachine.
<code>Spotfire.ClientCertificate.StoreName</code>	The store name for the installed X.509 client certificate used to authenticate with Spotfire Server. Can be AddressBook, AuthRoot, CertificateAuthority, My, Root, TrustedPeople, or TrustedPublisher.
<code>Spotfire.ClientCertificate.SerialNumber</code>	The serial number for the installed X.509 client certificate used to authenticate with Spotfire Server.
<code>Spotfire.Authentication.OAuth2.ClientId</code>	The client ID for OAuth2 authentication. Set this to the clientId that is returned when you run the register-job-sender-client command-line interface (CLI) command. For instructions on running the command, see Configuring the Client Job Sender for OAuth2 authentication .

Setting	Description
<code>Spotfire.Authentication.OAuth2.ClientSecret</code>	The client secret for OAuth2 authentication. Set this to the clientSecret that is returned when you run the <code>register-job-sender-client</code> CLI command. For instructions on running the command, see Configuring the Client Job Sender for OAuth2 authentication .



If no username and password or client certificate is specified and Spotfire Server uses Windows authentication (NTLM or Kerberos), then the Client Job Sender will use the identity of the Windows user that executes the job to authenticate with Spotfire Server.

It is possible to encrypt the password or the client secret that is specified in the configuration file. To encrypt the password or client secret (whichever setting has a value in the configuration file), enter the following on the command line:

```
Spotfire.Dxp.Automation.ClientJobSender.exe -encryptPassword [encryptWithUserScope]
```



Add the `encryptWithUserScope` parameter to encrypt using the current Windows user account; otherwise, the computer account is used. For more information, see <https://msdn.microsoft.com/en-us/library/system.security.cryptography.dataprotectionscope.aspx>. After encryption, the password and clientSecret fields in the configuration file are empty and new fields (`Spotfire.Authentication.Basic.Password.EncryptedUserscope` or `Spotfire.Authentication.Basic.Password.EncryptedMachineScope`, and `Spotfire.Authentication.OAuth2.ClientSecret.EncryptedUserscope` or `Spotfire.Authentication.OAuth2.ClientSecret.EncryptedMachineScope`) containing the encrypted password or client secret are added.

Configuring the Client Job Sender for OAuth2 authentication

If your company uses a web-based authentication method such as OpenID Connect, you must configure OAuth2 authentication from the Spotfire Automation Services Client Job Sender to the Spotfire Server. This requires you to run a command on the Spotfire Server command line.

Prerequisites

You must have administrative credentials for Spotfire Server.

Procedure

1. On the computer running Spotfire Server, open a command line as an administrator and change the directory to the location of the `config.bat` file (`config.sh` on Linux). The default location is `<server installation directory>\tomcat\spotfire-bin`.
2. Enter the following command, adding a name for the client to be created:

```
config register-job-sender-client --name=clientname
```

The server registers a new Client Job Sender OAuth2 client and displays its client ID and client secret.



If the Client Job Sender executes jobs that are stored in the library, the created client must have "read" access to the folders where the jobs are stored. Give access to the user by using the Library Administration tool in Spotfire Analyst. For instructions, see "Editing Folder Permissions" in the Spotfire Analyst [User's Guide](#).

3. From the folder where you placed the Automation Services Client Job Sender files, open the `Spotfire.Dxp.Automation.ClientJobSender.exe.config` file in an XML editor or a text editor.

4. In the <appSettings> section, enter the values for the client Id and client secret from step 2 for the following settings:

```
Spotfire.Authentication.OAuth2.ClientId
Spotfire.Authentication.OAuth2.ClientSecret
```

5. Save and close the configuration file.

Running the Client Job Sender

The Client Job Sender, which is run on the command line, executes Automation Service jobs.

Prerequisites

- You have an Automation Services job file that was created by using the Job Builder.
- You are a member of the group Automation Services Users.
- The files `Spotfire.Dxp.Automation.ClientJobSender.exe` and `Spotfire.Dxp.Automation.ClientJobSender.exe.config` are located in the same directory.
- If the job you are executing was saved in the library, you have "read" access to the job file.

Procedure

- On the command line, enter your information in the following format:

```
"C:\Program Files (x86)\TIBCO\TIBCO Spotfire Automation Services
\Spotfire.Dxp.Automation.ClientJobSender.exe" "http://SpotfireServer:8080" "/Jobs/MyJob"
-useLibraryPath
```

where:

- `C:\Program Files (x86)\TIBCO\TIBCO Spotfire Automation Services\Spotfire.Dxp.Automation.ClientJobSender.exe` is the path to the Job Sender tool.
- `http://SpotfireServer:8080` is the URL to the Spotfire Server.
- `/Jobs/MyJob` is the location of a job stored in the library.



The job may also be stored in a directory outside of the library. In that case, enter the complete path to the job file. See the second example, below.

- `-useLibraryPath` indicates that the job is being identified by its library path.



Alternatively, you can identify a job in the library by using its Library ID. In that case, enter the following text after the ID: `-use LibraryId`. See the first example, below.



To quickly copy the path to a job file in the library, or the Library ID of the job file, in the Automation Services Job Builder, click **Copy Path** or **Copy Library ID** on the **Tools** menu.



By default the Client Job Sender waits for the job to finish before the tool closes. To have the tool close immediately after the job starts, add the `-async` flag to the end of the command line. This can be useful if you want to run several jobs simultaneously. See the third example, below.

For more information, see [Client Job Sender monitoring](#).

Examples

- To execute a job stored in the library using the Library ID:

```
"C:\Program Files\TIBCO Spotfire
\Spotfire.Dxp.Automation.ClientJobSender.exe" "http://
SpotfireServer:8080/" "038e181b-d05d-4f3f-9ef7-aef52c96f04b" -
useLibraryId
```

- To execute a job stored outside of the library:

```
"C:\Program Files\TIBCO Spotfire
\Spotfire.Dxp.Automation.ClientJobSender.exe" "http://
spotfireserver:8080/" "C:\Temp\jobfile.xml"
```

- Asynchronous example:

```
"C:\Program Files\TIBCO Spotfire
\Spotfire.Dxp.Automation.ClientJobSender.exe" "http://
SpotfireServer:8080/" "C:\Path\jobfile.xml" -async
```

- To encrypt the password or the client secret in the configuration file, also enter the following command:

```
"C:\Program Files\TIBCO Spotfire
\Spotfire.Dxp.Automation.ClientJobSender.exe" encryptPassword [-
encryptWithUserScope]
```

Scheduling the Client Job Sender

To schedule a job to be executed with the Spotfire Automation Services Client Job Sender, use Windows Task Scheduler.

In Windows Task Scheduler, create a new task that executes the Client Job Sender, provide arguments to it as described in [Configuring the Client Job Sender](#), and set it to run periodically as needed. For more information about how to use the Windows Task Scheduler, refer to the Microsoft documentation on the feature.

The status of running jobs and the jobs history is available in Spotfire Server, on the **Automation Services** tab of the Monitoring & Diagnostics area. For more information, see the Spotfire Server help.

Client Job Sender monitoring

When running Automation Services jobs with the Client Job Sender, the results of the jobs can be found in the log file `Spotfire.Dxp.Automation.ClientJobSender.exe.log`.

This log is available in two places:

- In the same directory as the Client Job Sender files.
- On Spotfire Server, on the Automation Services page in the Monitoring & Diagnostics section. The Spotfire Automation Services Client Job Sender returns a code reporting if a job succeeded or failed. If the job failed, the return code also returns a message indicating how it failed. The return values are stored in the `ERRORLEVEL` environment variable.

These are the valid return codes:

Return code value	Return code	Message
0	Success	The job succeeded.

Return code value	Return code	Message
1	CommandLineParameterError	An incorrect command-line parameter was supplied.
2	ServerExecutionError	The job failed on the server.
3	ClientExecutionError	The client failed to send the job to the server.