

TIBCO Spotfire® Clinical Graphics

Installation and Administration Guide

*Software Release 2.2
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two-second advantage™



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TSCG SERVER OVERVIEW

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INTRODUCTION

TIBCO Spotfire® Clinical Graphics (TSCG) includes a graphical user interface and Spotfire S+ packages. It is powered by, and built to run on, TIBCO Spotfire Statistics Services. This guide provides information to the administrator of a TSCG server. It is not meant to replace the *TIBCO Spotfire Statistics Services Installation and Administration guide*; rather, it provides material supplemental and specific to installing and managing TSCG server.

For more information about configuring and administering the Spotfire Statistics Services, see its Administration Guide, (**Spotfire_Statistics_Services_Install_Admin.pdf**) included in the **SPSERVER_HOME/docs** directory, and also available from the server landing page, available from your browser at:

`http://servername:portnumber/SplusServer`

Installation Directories

Throughout this documentation, we refer to **SPSERVER_HOME**, **SPSERVER_SHARE**, and **TSCG_HOME**.

- **SPSERVER_HOME** is the Spotfire Statistics Services stand-alone installation directory, plus the Service Name you specified in its installation. For example, on a Windows 2003 or Windows 2008 server, the default is:

`C:\Program Files\TIBCO\statsvcs45\statsvcs`

You can specify a meaningful Service Name. For example:

`C:\Program Files\TIBCO\statsvcs45\TSCG`

on a UNIX or Linux server , the default is:

`/opt/TIBCO/statsvcs45/statsvcs`

You can specify a more useful Service Name. For example:

`/opt/TIBCO/statsvcs45/TSCG`

- **SPSERVER_SHARE** is the shared directory you chose when establishing the Spotfire Statistics Services cluster. For more information about cluster deployments, see Chapter 3 of the *TIBCO Spotfire Statistics Services Installation and Administration Guide*.

- **TSCG_HOME** is a subdirectory labeled **tscg22** and is in **SPSERVER_HOME** (in the case of a stand-alone) or in **SPSERVER_SHARE** (in the case of a cluster). For example, in the case of a stand-alone:

Windows:

C:\Program Files\TIBCO\statsvcs45\TSCG\tscg22

Unix:

/opt/TIBCO/statsvcs45/TSCG/tscg22

See the section TSCG Files on page 20 for more information about the contents of these directories.

ARCHITECTURAL OVERVIEW

You can install Spotfire Statistics Services with TSCG as either stand-alone or as a cluster. The following drawing shows a simple deployment (that is, not a cluster). For more information about clusters, see the section [Installing TSCG on a Cluster](#) on page 17.

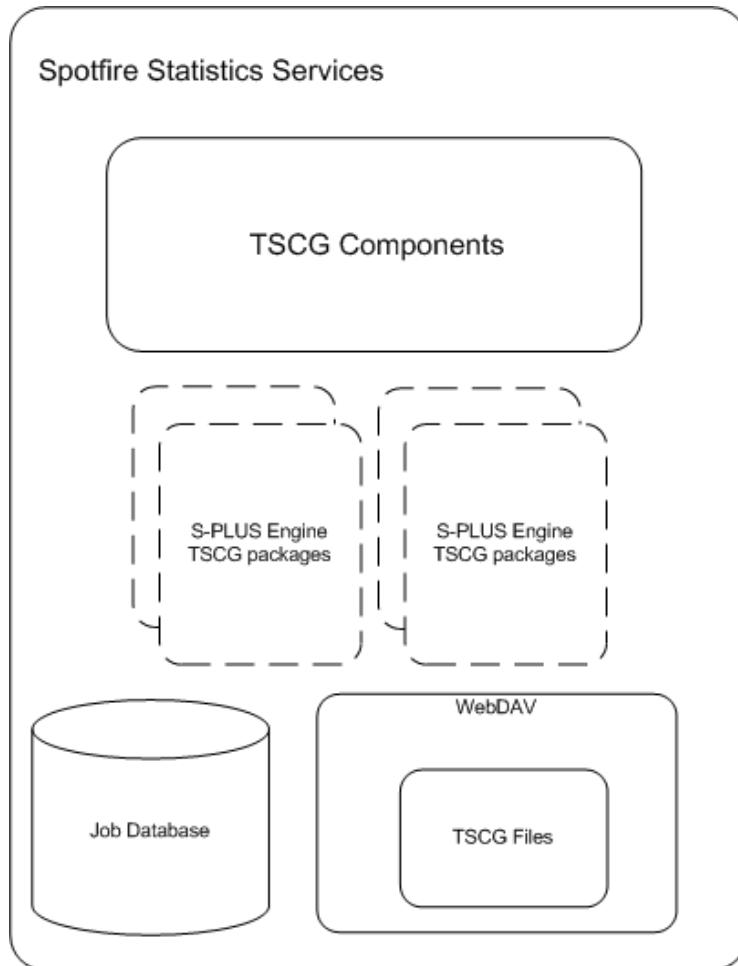


Figure 1.1: TSCG components in the Spotfire Statistics Services system.

Engines are initialized with the available packages (tscg, gom, graphlet, plus any custom packages) and are ready to accept requests. The TSCG client and server work together as follows:

1. Spotfire Statistics Services accepts a request from the TSCG client.
2. The server passes the job to an available S-PLUS engine.
3. The functions in the available packages process and return the results to the server.
4. The server renders the graph in the client.
5. The TSCG client user can save the resulting graph in a user directory in WebDAV (the default), on a local or remote drive, or in a location you have specified in the **conf.xml**. (See the section Configuration file on page 29 for more information about configuring alternative file locations.)

PREREQUISITES

Before you install TSCG Server, you must have installed Spotfire Statistics Services, version 4.5, and the service must be running. Your systems must meet the requirements described in this section to run both Spotfire Statistics Services and the TSCG Server.

Supported Platforms

You can run TSCG Server on either Microsoft Windows or UNIX/Linux servers.

Windows

- Microsoft® Windows Server 2003 Standard and Enterprise Editions (32/64-bit, x86/x64).
- Microsoft Windows Server 2008 Standard and Enterprise Editions (32/64-bit, x86/x64).

Unix/Linux

- Red Hat Enterprise Linux® 5 and 6 (32/64-bit, i586/x86_64).
- SUSE Linux Enterprise Server 10 SP3, 11 (32/64-bit, i586/x86_64).

System Requirements

TIBCO Spotfire Statistics Services with TSCG can operate on most modern systems, but the minimum system requirements are dictated by the actual use case.

All platforms

Minimum recommended system requirements for all platforms:

- 700 MB disk space to install Spotfire Statistics Services.
- 171 MB disk space to install the TSCG Server.
- 1 GB RAM (more recommended for improved performance).
- One or more 3 GHz processors.
- 10/100 network interface card (1 gigabit ethernet (GbE) recommended for improved performance).
- One available TCP port. (The default is 8080.)

These figures include space required for Apache Tomcat and the JRE (both are installed as part of Spotfire Statistics Services).

INSTALLING TSCG SERVER

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INTRODUCTION

Install TIBCO Spotfire Clinical Graphics (TSCG) Server on a computer running either a stand-alone version or a cluster of TIBCO Spotfire[®] Statistics Services 4.5.

Note

If you encounter problems or need additional information about customizing your TSCG Server installation, browse to <http://spotfire.tibco.com/support> and register for a support account.

This chapter covers installing TSCG Server on:

- A stand-alone Spotfire Statistics Services installation on a computer running Windows[®].
- A stand-alone Spotfire Statistics Services installation on a computer running UNIX[®]/Linux[®].
- A Spotfire Statistics Services cluster installation on Windows.
- A Spotfire Statistics Services cluster installation on UNIX/Linux.

Upgrading from TSCG 2.1

If you have a previously-installed version (2.1 or earlier) of TSCG Server, you must uninstall it and install this version (2.2) of TSCG Server. You must also uninstall your previous version (8.1.1 or earlier) of Spotfire S+ Server and install TIBCO Spotfire Statistics Services version 4.5. Follow these steps to upgrade.

1. Stop the TIBCO Spotfire S+ Server service.
2. Browse to the directory **SPSERVER_HOME/data/tscg** and back up the contents to a safe location.

Note

Back up the contents of the **SPSERVER_HOME/Data/tscg** to a folder *other than TSCG_HOME*. You will be deleting this directory in a later step.

3. Browse to the folder **TSCG_HOME/Uninstall_TSCG** (where **TSCG_HOME** is the directory where TSCG is installed) and run the application **Uninstall_TSCG**.
4. Browse to the folder **SPSERVER_HOME/Uninstall_SplusServer** (where **SPSERVER_HOME** is the directory where Spotfire S+ Server is installed) and run the application **Uninstall_SplusServer**.

Notes

On Windows, you can remove the TSCG client application, TSCG Server version 2.1 and earlier, and TIBCO Spotfire S+ Server 8.1.1 using **Add or Remove Programs** in the **Control Panel**.

To remove TSCG Server 2.1, you must do so using the application in **TSCG_HOME/Uninstall_TSCG**. See the section Uninstalling TSCG Server on page 24 for more information.

5. If the client is also installed on the server, uninstall it using **Add or Remove Programs** in the **Control Panel**.
6. Delete the directory **TSCG_HOME**.
7. Delete the directory **SPSERVER_HOME**.
8. Install TIBCO Spotfire Statistics Services 4.5 and version 2.2 of TSCG, following the steps described in the remaining portions of this chapter.
9. After you have installed both Spotfire Statistics Services and TSCG, and you have validated that both are working, delete the directory **SPSERVER_HOME/data/tscg**, and replace it with your backup copy.
10. Edit the file **conf.xml**, as described in the section Configuration file on page 29.

Upgrading the TSCG Client Application

Your client application users must uninstall the previous version of the client application prior to upgrading to the version of TSCG client application provided with this server. The client application users can uninstall the older version of the application using **Start > Control Panel > Add or Remove Programs**.

Advise your users to manually delete the client's Application Data directory. This directory contains temporary client configuration and data files that are not removed by the uninstaller and can interfere with the new client application functionality if they are not removed.

- On Windows XP, this directory is located at
C:\Documents and Settings\username\Application Data\TIBCO\TIBCO Spotfire Clinical Graphics.
- On Windows Vista and Windows 7, this directory is located at
C:\Users\username\AppData\Roaming\TIBCO\TIBCO Spotfire Clinical Graphics

Preparing Permissions on Windows

You can install TSCG Server either while you are installing Spotfire Statistics Services, or at a later time, adding to an existing version of Spotfire Statistics Services. In either case, you must prepare the server by configuring appropriate permissions for reading and writing. Specifically, the service user must have the following permissions:

- Any required domain resources (for example, data or graph repositories you might map to via a UNC path).
- For a stand-alone installation, read and write access to the Spotfire Statistics Services installation directory and all subdirectories. (For example, this allows results to be written to the WebDAV directory. It also allows one to download the client from the Clinical Graphics landing page.)
- For a cluster installation, read and write access to the shared directory used for the cluster. We refer to this directory as **SPSERVER_SHARE**. (For example, this allows results to be written to the WebDAV directory. It also allows one to download the client from the Clinical Graphics landing page.)

Note

Setting permissions is not required if you do not need to access network resources.

Before you install TSCG Server, identify the user account name for the computer on which you will be running TSCG Server. You must provide this user account name to access any resources that the server needs. This name takes the form of **DOMAIN\USERNAME**.

If the service user does not have **Log on as a service permissions**, you must set this option prior to installing Spotfire Statistics Services, or prior to configuring TSCG.

To set Log on as service permissions

1. From the **Start** menu, open **Administrative Tools**.
2. Double-click **Local Security Policy**.
3. In **Local Policies**, in the left pane, select **User Rights' Assignment**.
4. In the right pane, double-click **Log on as a service**.
5. In the **Log on as a service Properties** dialog, check the list to see if the computer you've identified as the Service User is listed. If not, click **Add User or Group**.
6. In the **Select Users or Groups** dialog, provide the name in the form **DOMAIN\USERNAME**.
7. Click **OK**.

Set Local Security Permissions During a Spotfire Statistics Services Installation

If you have not yet installed Spotfire Statistics Services, follow the instructions in Chapter 2 (stand-alone) or Chapter 3 (cluster) of the *TIBCO Spotfire® Statistics Services 4.5 Installation and Administration Guide*. In particular, configure the following options during the installation:

- In the Spotfire Statistics Services installation **Service Name** panel, provide a meaningful service name for your TSCG installation. By default, this is set to *statsvc*. Throughout this chapter, the example **Service Name** is *TSCG*.
- In the **Service User** panel, select **Other Account**, and then, in the next panel, supply the **Service User** account name using the form **DOMAIN\USERNAME**. You must also supply the password.

Complete the installation according to the instructions, starting the service when you are finished. Test the configuration to verify that the installation is valid. For information about testing the Spotfire Statistics Services configuration, see the section Validation in Chapter 2, Perform a Standalone Installation, in the *TIBCO Spotfire Statistics Services Installation and Administration Guide*.

Set Local Security Permissions For an Existing Spotfire Statistics Services Installation If Spotfire Statistics Services has been installed on the Windows Server 2003 or Windows Server 2008 computer, and you did not set the service to run as a dedicated service user account, follow these steps:

1. From the **Start** menu, click **Administrative Tools > Services** to open the **Services** console.
2. Select **TIBCO Spotfire Statistics Services 4.5 (TSCG)** service (where **TSCG** corresponds to the service name you chose), and stop the service.
3. Right click the service, and then click **Properties**.
4. Select the **Log On** tab.
5. Click **This account**, and then type the service account name and password. You must provide the account name as **DOMAIN\USERNAME**
6. After you have applied these changes, restart the service..

Note

If you encounter issues starting the service, check to ensure that the service user account you specified has the appropriate permissions. See the section **Validating User Account Permissions** on page 49.

Validating User Account Permissions Check to make sure that the user account you specified has the appropriate permissions for any local or remote resources used by the server. More specifically:

After installing Spotfire Statistics Services, check that your server has read and write access to all necessary directories:

1. In **SPSERVER_HOME**, right-click the **data** directory.
2. Click **Properties**.
3. Click the **Security** tab.
4. In the **Permissions** box, select **Full Control**.
5. Click **Advanced** (Windows Server 2003).

6. Click **Replace permission entries on all child objects with entries shown here that apply to child objects**. This option propagates the permission changes throughout the installation directories.

Preparing Permissions on UNIX

You can install TSCG Server either while you are installing Spotfire Statistics Services, or at a later time, adding to an existing version of Spotfire Statistics Services. In either case, you must prepare the server by configuring appropriate permissions for reading and writing. Specifically, the service user must have the following permissions:

- Any required domain resources.
- For a stand-alone installation, read and write access to the Spotfire Statistics Services installation directory and all subdirectories. (For example, this allows results to be written to the WebDAV directory. It also allows one to download the client from the Clinical Graphics landing page.)
- For a cluster installation, read and write access to the shared directory used for the cluster. We refer to this directory as **SPSERVER_SHARE**. (For example, this allows results to be written to the WebDAV directory. It also allows one to download the client from the Clinical Graphics landing page.)

Note

Setting permissions is not required if you do not need to access network resources.

Run the TSCG installation using the same account that was used to run the Spotfire Statistics Services installation (that is, the user that Spotfire Statistics Services runs under).

1. Provide the user account with the permissions to the appropriate resources using `chown` and `chmod`. (See your operating system manual pages for more information about `chown` and `chmod`.)
2. After you have applied these changes, restart the service.

Setting the Service User

If you specified the Service User in your Spotfire Statistics Services installation, you can use this step to verify or modify your Service User permissions.

On Windows

1. Browse to the directory **SPSERVER_HOME\tomcat\bin**.
2. Double-click to run the utility **service_namew.exe**. (where service_name is the name you assigned to the service; for example, **TSCGw.exe**.)
3. In the **TIBCO Spotfire Statistics Services (Service Name) Properties** dialog, click the **Log On** tab.
4. Select **This account**.
5. In the text box, type the **DOMAIN\USERNAME**.
6. Type the password, and then confirm the password.
7. Click **OK**.

On UNIX

The Service User is specified in the script **SPSERVER_HOME/init.d/spserver**, and is the value of **TOMCAT_USER**.

If you change the Service User after the Spotfire Statistics Services installation, you might need to adjust ownership and permissions. In the case of a stand-alone installation, you might need to adjust the ownership and permissions for **SPSERVER_HOME**. In the case of a cluster, you might need to adjust the ownership and permissions for **SPSERVER_SHARE** and ensure that each node has the correct ownership and permissions for **SPSERVER_HOME**.

Installing TSCG Server

You must have Spotfire Statistics Services installed, and the service must be running to proceed with your TSCG installation.

After you start the TSCG installer and accept the license agreement, you might see a list of more than one TIBCO Spotfire Statistics Services 4.5 installations on the computer. Select the Service Name installation where you want to install your TSCG Server (for example, TSCG).

Note

The TIBCO Spotfire Clinical Graphics installer excludes any Spotfire Statistics Services installations that are configured to work with R.

**Installing TSCG
on Windows
(Stand-Alone)**

This section provides instructions for installing TSCG on a Windows server.

1. Make sure that Spotfire Statistics Services is running during your installation of the TSCG server. If it is not running, you cannot continue with the installation.
2. To start the installer, from the installation media, double-click the appropriate installation executable to proceed (that is, select the same system that you used when you installed Spotfire Statistics Services) :
 - For a 32-bit system:
TIB_sf_clinical_graphics_2.2.0_win_x86_32.exe
 - For a 64-bit system:
TIB_sf_clinical_graphics_2.2.0_win_x86_64.exe
3. Follow the steps to install the TSCG server components.
4. After the installer completes, restart Spotfire Statistics Services.
5. Open a browser window, and in the address bar, type:

<http://servername:portnumber/tscg/>

where **servername** and **portnumber** are the properties you specified in your Spotfire Statistics Services installation.

If your installation was successful, the browser window displays the TSCG landing page. From this page, you can browse to the documentation and the client application

download page. Also, you can validate the server and check to see which libraries are loaded. See the section Validating the Server on page 18 for instruction.

6. Edit the file **conf.xml**, as described in the section Configuration file on page 29.

Installing TSCG on UNIX/Linux (Stand-Alone)

This section provides instructions for installing TSCG on a supported UNIX/Linux computer. Most users should accept the default settings.

Note

You must install TIBCO Spotfire Clinical Graphics with the same user account used to install TIBCO Spotfire Statistics Services.

1. Log on as the user TSCG will run under. This should be the same account used for running Spotfire Statistics Services. This can be root or any other valid user account.
2. From the installation media, ensure the **.bin** file has execute permissions, and then run it.

If your platform is Linux 64-bit, for example, this can be done with the following commands:

```
# chmod a+x TIB_sf_clinical_graphics_2.2.0_linux24g123_x86_64.bin  
# ./TIB_sf_clinical_graphics_2.2.0_linux24g123_x86_64.bin
```

Read and follow the instructions displayed in the console.

3. After the installer completes, restart Spotfire Statistics Services.
4. Open a browser window, and in the address bar, type:

http://servername:portnumber/tscg/

where ***servername*** and ***portnumber*** are the properties you specified in the Spotfire Statistics Services installation.

If your installation was successful, the browser window displays the TSCG landing page. From this page, you can browse to the documentation and the client application

download page. Also, you can validate the server and check to see which libraries are loaded. See the section [Validating the Server](#) for instruction.

5. Edit the file **conf.xml**, as described in the section [Configuration file](#) on page 29.

Installing TSCG on a Cluster

You can install the TIBCO Spotfire® Clinical Graphics (TSCG) server on multiple computers to operate together in a clustered environment. If you are preparing to deploy your server and find you need scalability, availability, and reliability that go beyond the benefits of a stand-alone TSCG installation, consider deploying TSCG in a clustered environment.

Use the following steps to deploy TSCG server in a clustered environment:

1. Deploy Spotfire Statistics Services according to the instructions in Chapter 3, [Perform a Cluster Installation](#), in the *TIBCO Spotfire Statistics Services Installation and Administration Guide*.

Also, make sure you have installed, configured, and tested the Spotfire Statistics Services cluster installation, as described in that chapter.

Spotfire Statistics Services must be up and running when you install TSCG Server, or you will not be able to continue installing.

2. Run the installation once on any manager node. To determine the manager nodes in your cluster, in a browser, run the following:

`http://servername:portnumber/SplusServer/api/v8/nodes`

The installer places the web application archive (WAR) file into the server share for distribution to other nodes in the cluster.

- If you are installing to a cluster manager node that includes Tomcat, the WAR file is placed in the appropriate **webapps** directory.

- If your cluster has more than one manager node (recommended for failover), the installer prompts you to place the TSCG WAR file (**tscg.war**) in each of the appropriate manager node locations you identified in this step (whether or not you are using Tomcat).
3. After you complete the installation, restart Spotfire Statistics Services.

Note

Each node in a cluster must be able to access resources. If you encounter a failure, check the client log for the job ID to identify which node on the cluster is failing. To check the list of jobs, in a browser address box, type the following:

`http://servername:portnumber/SplusServer/api/v8/jobs`

See the URL API, available from your Spotfire Statistics Services landing page for more information:

`http://servername:portnumber/SplusServer/doc/ext/URLAPI/URL_API.htm`

Validating the Server To validate that the server is running, you can call the S-PLUS search function through the Spotfire Statistics Services URL API:

To validate the TSCG Server:

- In a browser session, in the address box, type the following service URL (replacing **servername** and **portnumber** with the ones you specified in the Spotfire Statistics Services installation).

`http://servername:portnumber/SplusServer/api/v8/function/search`

If the server is operating correctly, it returns the `SplusDataResult` object as SPXML, which includes the packages loaded in the Spotfire S+ session. If TSCG is installed correctly, the following packages appear in the search path:

- **tscg**
- **gom**
- **graphlet**

BROWSING TSCG

To familiarize yourself with TSCG, you can browse to following locations, each of which is relevant to using TSCG. These locations provide links to extensive documentation and download instructions and files for the client or the extensions.

Review and direct your TSCG users to the following resources:

Table 2.1: TSCG Resource URLs.

URL	Description
<code>http://servername:port/tscg</code> (for example: <code>http://myserver:8080/tscg</code>)	Main landing page with links to documentation and client pages.
<code>http://servername:port/tscg/client</code> (for example: <code>http://myserver:8080/tscg/client</code>)	Landing page for downloading the TSCG client application.

- The URL for **tscg/client** is described further in Chapter 4, Deploying the TIBCO Spotfire Clinical Graphics Client.

TSCG FILES

This section describes TSCG files and directories that you must know about to administer a TSCG server. These files are located in **TSCG_HOME** (See the section [Introduction](#) on page 2 for more information about the location of **TSCG_HOME**).

Table 2.2: *TSCG Files in **TSCG_HOME** to know about.*

File Name	Description
client/conf/conf.xml	The server-side configuration file that each client reads, and that you can use to customize settings and file locations for the TSCG installation. See the section Configuration file on page 29 for more information.
init-tscg.ssc	The S-PLUS script that loads the libraries that TSCG uses. Also contains other configuration options. See section TSCG Initialization Script on page 26 for more information.
Install_TSCG.log	Contains a log detailing the installation of TSCG on the server.
license.txt	Contains the license agreement for using TSCG on the server and the TSCG client. Defines the licensing options and terms.
trademarks.txt	Lists the trademarked terms that are used by TSCG, and referred to in the documentation.
version_info.txt	Provides version information for the TSCG server components. This information is useful if you need to call Technical Support Services.
Uninstall_TSCG/ Uninstall_TSCG.exe	The application you must use if you need to uninstall TSCG Server.

Spotfire Statistics Services	The following section describes the structure of the Spotfire Statistics Services as it pertains to TSCG. For more information about Spotfire Statistics Services, see its documentation, <i>TIBCO Spotfire Statistics Services Installation and Administration Guide</i> .
TSCG Data Files	<p>The following directories contain default locations for data file associated with TSCG. These data files are located in SPSERVER_HOME/data/tscg/files (in the case of a stand-alone) or in SPSERVER_SHARE/data/tscg/files (in the case of a cluster).</p> <p>(You might notice these paths in TSCG_HOME/client/conf/conf.xml. As the TSCG Server Administrator, you might change this configuration to point to other repositories. See the section Configuration file on page 29 for more information about changing the defaults.)</p>

Table 2.3: Data directories specific to TSCG.

Directory	Description
DataSources /Examples /Shared /Users	<p>The Examples directory contains example data sources provided by TIBCO Spotfire.</p> <p>The Users directory contains private custom data sources uploaded by the users.</p> <p>The Shared directory contains data sources available to all users. The System Administrator is responsible for copying shared data sources to this directory.</p>
Extensions /GraphElements /GraphTypes	Contains any user-created graph types and graph elements.
Graphs /Shared /Users	<p>The Shared directory contains graphs (.igd files) available to all users. The System Administrator is responsible for copying shared graphs to this directory.</p> <p>The Users directory contains graphs saved in the client to the default server user location.</p>
Resources/ DataSelectionCustomizations /DefaultGraphs	Contains default graph templates and data selection customizations.

Table 2.3: Data directories specific to TSCG. (Continued)

Directory	Description
Results	Contains users' temporary files of graph results. See the section Managing Temporary Files on page 45 for more information about managing these files from the server.
Scripts /Users	Contains S scripts that users generate from graphs.
StudyInformation /Shared /Users	Contains XML files describing any study information that applies to one or more graphs.
Themes /Shared /Users	The Shared directory contains themes (.igt files) available to all users. The System Administrator is responsible for copying shared themes to this directory The Users directory contains themes uploaded by the users. Users can apply their own or shared themes to different graphs for similar styles.

TSCG Webapp

The TSCG webapp is located in the **SPSERVER_HOME/tomcat/webapps/tscg** directory and is used by the client to offload some tasks to the server (for example, searching for graphs).

The **WEB-INF** directory contains the installation of Eclipse Infocenter, the webapp used for TSCG Help.

Note

The TSCG Webapp is installed only on the manager node in a cluster installation.

tomcat /webapps /tscg	This is the default location for the webapps directory containing the support directory for the TSCG client. It contains the TSCG webapp used by the client to offload some tasks to the server (for example, searching for graphs). The WEB-INF directory contains the installation of Eclipse Infocenter, the webapp used for TSCG Help.
------------------------------	--

TSCG-RELATED SERVICES

This section discusses the services that TSCG uses, which you manage as system administrator.

At this point, you should have a successful installation of TSCG on the server, and you should know how to start the service, as described in the section Starting, Stopping, and Restarting Services.

TIBCO Spotfire Statistics Services uses port 8080 by default. If you have a problem running this service, check the port number to make sure you have no conflicts.

Starting, Stopping, and Restarting Services

Windows: Starting, Stopping, or Restarting Services

1. From the **Start** menu, click **Programs > Administrative Tools > Services**.
2. In the **Services** console, select **TIBCO Spotfire Statistics Services** to start, stop, or restart. This service is set to start automatically by default.

UNIX/Linux: Starting, Stopping, or Restarting Services

TIBCO Spotfire provides the following scripts for starting, stopping, or restarting services:

- **SPSERVER_HOME/init.d/spserver**

You can start, stop, or restart the daemon with
SPSERVER_HOME/init.d/spserver

start
stop
restart

Note

In a cluster installation, you must perform the above steps for each node.

UNINSTALLING TSCG SERVER

Important

TSCG should be removed before uninstalling the associated instance of TIBCO Spotfire Statistics Services. If Spotfire Statistics Services is removed prior to uninstalling TSCG, you will be unable to use the TSCG uninstaller. In this case, simply delete the remaining TSCG directories from the installation directory.

To uninstall a standalone version of TSCG Server:

On Windows

1. Run the following command:
SPSERVER_HOME\tscg22\Uninstall_TSCG
\Uninstall_TSCG.exe.
2. Follow the subsequent instructions to uninstall the TSCG server.

Notex

The uninstaller for TSCG Server is *not* available through **Add or Remove Programs** in the **Control Panel**. Instead, you must follow the above steps to uninstall it.

If TSCG is listed in **Add or Remove Programs**, it refers only to the client application, not the TSCG server.

On Unix

1. Run the following command:
SPSERVER_HOME/tscg22/Uninstall_TSCG/Uninstall_TSCG.
2. Follow the subsequent instructions to uninstall the TSCG server.

To uninstall a cluster version of TSCG Server, follow the above steps, but run the commands from SPSERVER_SHARE. You need run the uninstaller once per cluster. You must remove the TSCG Web application manually from each manager node. Find the TSCG Web application in SPSERVER_HOME/tomcat/webapps. Delete both the **tscg** directory and **tscg.war**.

CONFIGURING THE TSCG SERVER

3

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TSCG INITIALIZATION SCRIPT

The TIBCO Sportfire® Clinical Graphics (TSCG) initialization script (**init-tscg.ssc**) contains paths and customizable gom settings for the TSCG server. This file is sourced by the Spotfire Statistics Services initialization file (**init-spserver.ssc**), so it is run when the S-PLUS engines in the Spotfire Statistics Services engine pool initialize. For example, on Windows, the S-PLUS command in **init-spserver.ssc** to initialize TSCG might look something like the following:

```
source("C:/Program Files/TIBCO/statsvcs45/TSCG/tscg22/  
      init-tscg.ssc")
```

(On Windows, note that when you provide a path, you must formulate that path using either forward slashes (/) or a double backslash (\\\).)

As part of the S-PLUS engine initialization for TSCG, the gom package is loaded. The gom package is a Spotfire S+ library that contains functions to create graphs, determine available graph types, define plot elements, and control page layout and size, among other things. The script **init-tscg.ssc** can include modifications to the gom options. For example you can provide a customized page layout specification and specify the quantile computation method. You must include S-PLUS code customizing the gom in the initialization script. Usually a Spotfire S+ programmer in your organization will provide a Spotfire S+ script to you.

Default gom options are provided when a user loads the gom package; however, the settings in `gomOptions` overwrite the defaults. For more information, see the gom package help.

Default TSCG Initialization Script

This section shows the default TSCG initialization script. By default, this file is created at **TSCG_HOME/tscg22/init-tscg.ssc** (where **TSCG_HOME** is the TSCG server installation directory. See the section [Introduction](#) on page 2 for more information about **TSCG_HOME**).

The tables following this script describe the environment variables, the package settings, the custom package functions, and the customized gom options.

```
##### TSCG Packages #####
```

```

library(tscg)

##### GOM Options #####
## SET QUANTILE METHOD ##
#gomOptions( quantileComputationMethod = "sas5" )

## SET DEFAULT FOOTER ##
#gomOptions("page.footer.text" =
#  c("Template: [title], [version], [validationStatus]",
#    "Date: [lastModified]", "Data: [dataSource]"))

## SET DEFAULT FONT SIZE ##
#gomOptions( fontSize = Size( 14, "pt" ) )
#gomOptions( labelFontSize = Size( 11, "pt" ) )
#gomOptions(fontType = FontType("Times New Roman"))

```

Standard Package The following S-PLUS function loads the required TSCG package (tscg).

Table 3.1: *TSCG package.*

TSCG Package	Description
library(tscg)	Loads the specified library (tscg). This library is required for TSCG to work correctly. Loading this package ensures that the Graphics Object Model (gom) and graphlet packages are loaded. Do not modify this entry.

gom Options

The following example options are set by function calls to TSCG by Spotfire S+ programmers who want to use these or other global gom options. Your statistician or Spotfire S+ programmer can provide you with guidelines and additional function calls, if necessary. By default,

they are commented out in the script. To have the engine use these functions on initialization, remove the comment markers (#) at the beginning of each line.

Table 3.2: *gom options.*

gom Option	Description
quantileComputationMethod	Sets the quantile computation method to pass to the gom package. Available options are: splus, sas1, sas2, sas3, sas4, or sas5 (the default).
page.footer.text	Sets the variables or character strings that are passed to the footer parameter in the gom page object. This setting creates a footer that is added to each graphic.
fontSize	Sets the default base font size for text elements in gom graphics. The fontSize value is used in items that are not part of the actual plot (that is, axis labeling, page titles, headers, annotation, legend text, and so on). Text is scaled up or down from this base font size depending on settings in other gom attributes. The default font size is 14-pt.
labelFontSize	Sets the default font size for any labels that are part of the plot (including margin elements, labels on bars, points, reference lines, and so on). The default is 11-pt.
fontType	Sets the default font face for TSCG. By default, this is set to Times New Roman. Supported font types that you can specify using this script include Times New Roman, Palatino Linotype, Arial and Courier New. If your users require other font faces, they can set them for individual text elements and labels from the TSCG user interface.

CONFIGURATION FILE

The file **conf.xml** is a single, central configuration file that each client reads when a user launches the TSCG client. As administrator, you can modify the **conf.xml** to customize it for your installation. You can modify the notification settings and paths to server components in the **conf.xml** file.

The **conf.xml** is in a location in the TSCG webapp where client users can access it (**TSCG_HOME/client/conf**, where **TSCG_HOME** is the TSCG server installation directory).

For a stand-alone installation, this translates to the following default path on the server hard drive:

On a Windows 2003 or Windows 2008 server:

```
C:\Program Files\TIBCO\statsvcs45\servicename\statsvcs  
  \tscg22\client\conf\
```

On a UNIX/LINUX server:

```
/opt/TIBCO/statsvcs45/servicename/tscg22/client/conf
```

When users launch the client, in the login dialog, they can click the **Manage Servers** link and provide the URL to the server where the **conf.xml** is located. You need only supply the server name and port number for the clients to find the **conf.xml**. For example:

http://myserver:8080

Each time the TSCG client is started, it retrieves the current version of **conf.xml** to obtain its runtime configuration. If you modify **conf.xml** while TSCG clients are connected to the TSCG server, the client users must restart the TSCG client so that they can read the new settings.

conf.xml element reference

The following table contains a list of the elements in the **Spotfire.ClinicalGraphicsClient.Properties.Settings** application settings section of the configuration file (**conf.xml**). Note that the

value **http://servername:portnumber/SplusServer** identifies your TIBCO Spotfire Statistics Services home URL, whether it is a stand-alone installation or a cluster.

Table 3.3: *conf.xml elements and descriptions*

Element	Description
WebService	Sets the Spotfire Statistics Services Web service location. For more information about this setting, see the section WebService element on page 34 .
WebServiceType	Sets the Web service type to SPNET. Internal only. Do not change.
NotificationType	Sets the notification type as either <code>UdpCallback</code> or <code>Polling</code> . For more detailed information about this setting, see the section NotificationType element on page 35 .
NotificationReceiverPort	Sets a notification receiver port number for clients to receive notification messages from TSCG server. Only used when <code>NotificationType</code> is set to <code>UdpCallback</code> . For more information about this setting, see the section Notification ReceiverPort element on page 35 .
CreatedDateTimeFormat	Sets the date style for the field value that resolves to the date string identifying when the graph was created. By default, this element is set to <code>DD MMM YYYY</code> (for example, <code>10 Oct 2012</code>).
IncludePageXofY	Specifies whether to display on a multiple-page graph the phrase listing the current page number (X) and the total number of pages for the graph (Y). True by default.

Table 3.3: *conf.xml elements and descriptions*

Element	Description
Resources	Sets the server location for TSCG resources. Resources includes default templates provided with TSCG, and where templates saved by the user are stored. Default is http://servername: portnumber/SplusServer/webdav/tscg/ files/Resources .
Results	Sets the server location for server request results. Default is http://servername: portnumber/SplusServer/webdav/tscg/ files/Results .
StudyInformation	Sets the server location for the study information stored as part of a graph's metadata. Default is http://servername: portnumber/SplusServer/webdav/tscg/ files/StudyInformation . For more information about study information, see the TSCG Help topic Metadata - Description .
Help	Sets the server location for the TSCG client help files. You can include help topics to support your custom graph templates. Default is http://servername: portnumber/tscg/help .

Table 3.3: *conf.xml elements and descriptions*

Element	Description
DataPaths	<p>Sets the paths for the location of data (for user-created, shared, and example data sets) . The value you provide populates the Manage Data Paths dialog in the client. The default is http://servername: portnumber/SplusServer/webdav/tscg/ files/DataSources/ Users/[username] Shared Examples</p> <p>Note that the Examples directory contains example data files shipped with TSCG.</p>
GraphPaths	<p>Sets the paths for the location of graph types (for user-created and shared graphs). The value you provide populates the Manage Graphs dialog in the client. The default is http://servername: portnumber/SplusServer/webdav/tscg/ files/Graphs/ Users/[username] Shared</p>
GraphicPaths	<p>Sets the paths for the location of graphics (for user-created and shared graphics). The value you provide populates the Manage Graphics dialog in the client. The default is http://servername: portnumber/SplusServer/webdav/tscg/ files/Graphs/ Users/[username] Shared</p>

Table 3.3: *conf.xml elements and descriptions*

Element	Description
TemplatePaths	<p>Sets the paths for the location of graph templates (for user-created and shared templates). The value you provide populates the Manage Templates dialog in the client. The default is <code>http://<i>servername</i>:<i>portnumber</i>/SplusServer/webdav/tscg/files/Resources/DefaultGraphs/</code></p> <p style="text-align: center;">Users/[username] Shared</p>
ThemePaths	<p>Sets the paths for the location of graph themes (for user-created and shared themes). The value you provide populates the Manage Themes dialog in the client. The default is <code>http://<i>servername</i>:<i>portnumber</i>/SplusServer/webdav/tscg/files/Themes/</code></p> <p style="text-align: center;">Users/[username] Shared</p>
ScriptPaths	<p>Sets the paths for the location of scripts (for user-created and shared scripts). The value you provide populates the Manage Scripts dialog in the client. The default is <code>http://<i>servername</i>:<i>portnumber</i>/SplusServer/webdav/tscg/files/Scripts/</code></p> <p style="text-align: center;">Users/[username] Shared</p>

Table 3.3: *conf.xml elements and descriptions*

Element	Description
	<p>fileMappings</p> <p>If you are running TSCG on a UNIX or Linux server, you can map the client and server paths to point to the same location using their appropriate path formulation.</p> <p>fileMappings are set as follows:</p> <pre><string>[client path],[server path] </string></pre> <p>For example:</p> <pre><string>\server1\cureall\data, /server1/cureall/data</string></pre> <p>You can also map to a drive letter, if your server identifies your repository using a drive letter:</p> <pre><string>\server1\cureall\data, n:/cureall/data</string></pre> <p>If you need to map to a different URL than the default, you can add a mapping in this section.</p> <p>For example:</p> <pre>http://<servername>:<portnumber>/ SplusServer/webdav, C:/Program Files/TIBCO/statsvcs45/ statsvcs/data</pre> <p>You can have as many fileMappings as you like.</p> <p>Note If you are running a load balancer, or if you expose TSCG Server from a system with both a public and private DNS, you must provide file mappings as described in the section fileMappings on page 38.</p>

WebService element

Contains the location of Spotfire Statistics Services Web service location. It has the form of a URL consisting of the host name. We recommend the fully qualified domain name (FQDN) of the TIBCO Spotfire Clinical Graphics server, the port number, and Spotfire

Statistics Services application directory. By default, the port number is 8080, and the application directory is **SplusServer**. A typical value in this element has the form: **http://servername:portnumber/SplusServer/**.

WebServiceType element Sets the WebService type to SPNET. For internal purposes only. Do not change this element.

NotificationType element Sets the type of notification to use in order to receive notification messages from the server.

- 0 = `UdpCallback`
- 1 = `Polling` (the default)

The default is set to `Polling`.

Keep the default option of `Polling` if your TSCG server and clients are set to work across domains, or if your network administrator restricts the network to prevent UDP packets from being received by clients. (This restriction is common across systems on different subnets.) Setting to `Polling` means that the client will poll the server for notification messages, rather than receive the UDP notification packet from the server.

If your TSCG server and client(s) are set to work in the same domain, you can set this option to `UdpCallback`, so that the TSCG Server notifies the client when a job request is completed. This option is a more efficient notification type.

Notification ReceiverPort element Sets the port that the client should listen on for UDP callback notification messages from the server. This setting is ignored if the `NotificationType` setting is set to 1 (`Polling`). The value of 0 causes a random port to be selected.

Server Location elements Sets the location for resources created and stored on the server as a result of creating a graph or template. These items differ from those in Manage Paths in that you cannot set additional locations.

TSCG client users can view, but not change, the current settings if they click **Tools > Options**, and then in the **Options** dialog box, click the **Server** tab.

- Resources
- Results
- StudyInformation

- Help

Manage Paths elements

The remaining **conf.xml** elements allow you to specify a path to the different components. These components include:

- DataPaths
- GraphPaths
- GraphicPaths
- TemplatePaths
- ThemePaths
- ScriptPaths

Each of these components specifies:

- A set of Path Names (as friendly names). By default, we provide User and Shared. (Data Paths also includes Examples.)
- A logical flag, IsUserPath, for each name indicating whether the associated Path Name is set to the user's path (and therefore accommodates file uploads). By default, this value is set to "true" for <Path Name="User"...>. You can have only one IsUserPath set to true per setting name. If you set more than one to true, only the first instance is used.
- The actual paths to the component, as a URL or FQDN.

Note

When you specify a path to the server, make sure your path contains no spaces.

Example

The following shows the default Data Path configuration in **conf.xml**.

```
<setting name="DataPaths" serializeAs="Xml">
  <value>
    <Paths>
      <Path Name="User" IsUserPath="true">
        $SPSERVER_BASE_URL$/webdav/tscg/files/DataSources/
          Users/[username]
      </Path>
    </Paths>
  </value>
</setting>
```

```
<Path Name="Shared" IsUserPath="false">
    $SPSERVER_BASE_URL$/webdav/tscg/files/DataSources
        /Shared
    </Path>
<Path Name="Examples" IsUserPath="false">
    $SPSERVER_BASE_URL$/webdav/tscg/files/DataSources/
        Examples
    </Path>
</Paths>
<value>
</setting>
```

These elements populate the default paths in the client **Manage Data Paths**. The paths you specify are used to read files from in the client, but cannot be modified or deleted by the client. You can add a fully-qualified path to a repository external to the server to the conf.xml. For example:

```
<Path Name="UNC share" IsUserPath="false">
    \\servername.domain.com\servershare\data
</Path>
```

Important

Any path you add to the **conf.xml** must have the appropriate access permissions set for both the computers running the TSCG client application and to the computer running Spotfire Statistics Services with TSCG. See the section Preparing Permissions on Windows on page 10, or the section Preparing Permissions on UNIX on page 13.

If you are running a UNIX or Linux server, set the fileMappings. See Table 3.3 for more information.

- If the computers running the TSCG client application do not have access to the specified share, they will not see the share in the **Manage Paths** dialogs.
- If the server does not have access to the specified share, the user is prompted to copy the data to the default server webdav location.
- If you do not specify the fully-qualified path name, remote users will not have access to the path.

Note

If the server (or a cluster's worker node) has problems accessing a data path, check the engine log for an invalid path error message. See the section Invalid Data Path Error on page 51 for more information.

fileMappings

If you use a load balancer, or if you expose TSCG Server from a system with both a public and private DNS, you must add the following entry to the `fileMappings` section.

On Windows:

```
<string>http://servername:portnumber/SplusServer/webdav,  
C:/Program Files/TIBCO/statsvcs45/statsvcs/data</string>
```

On UNIX:

```
<string>http://servername:portnumber/SplusServer/webdav,  
/opt/TIBCO/statsvcs45/statsvcs/data</string>
```

where `http://servername:portnumber/SplusServer` matches the value of the `WebService` attribute in **conf.xml**, and the path after the comma reflects the path to the data directory under your Spotfire Statistics Services installation.

SPSERVER.PROPERTIES OPTIONS

The TIBCO Spotfire Statistics Services configuration file has properties that must be modified when you configure TSCG. Chapter 5 of the *TIBCO Spotfire Statistics Services Installation and Administration Guide* contains information specific to setting server properties. Review this chapter carefully and set properties according to your needs.

The description in the server installation guide for the property **engine.max.requests** warns against setting the value to any but the default of 1 without a thorough understanding of the stateful nature of the Spotfire Statistics Services. TSCG is designed specifically to reuse S-PLUS engines to optimize performance and eliminate the cost of restarting an engine with each request. Because of this design, for TSCG, we recommend setting **engine.max.requests** to 100, so the engines will process 100 requests before they are restarted.

If you set **engine.max.requests** to a value other than 1, you must set **engine.verbose.log** to **false**. If you need to have a verbose log, you can use our API to force an engine restart and generate a verbose log.

Important

Do not modify the spserver.properties option **engine.init.file**. It must point to the **SPSERVER_SHARE/conf/init-spserver.ssc** script.

SETTING FONTS IN UNIX/LINUX ENVIRONMENT

To preserve fonts when exporting graphs in a TSCG client connected to a UNIX/Linux TSCG server, you must place the fonts under the JRE associated with the S-PLUS engines. You can do this by copying the font .ttf files into **SPSERVER_HOME/splus/java/jre/lib/fonts**.

DEPLOYING THE TIBCO SPOTFIRE CLINICAL GRAPHICS CLIENT

4

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INTRODUCTION

This chapter contains guidance for installing the TSCG client application on users' computers.

You can configure the client installation to install silently on users' computers, or you can provide them with a location to download and install the application manually.

DEPLOYING TSCG CLIENTS

TSCG provides the **Microsoft Installer** (MSI) package that installs the client to the user's computer.

You can deploy the TSCG client using either a manual installation or a silent installation process.

Manual Installation

After you have installed and validated the TSCG server, you can browse to the following URL to see the link to the manual download:

`http://servername:8080/tscg/client`

If your organization uses a manual software installation process, you can just direct your users to browse to this URL, and then click the link on that page to download and run the MSI package. Users then follow the installation steps as they would for any other MSI installation.

Note

If your clients are upgrading from a previous version of TSCG client, first they should uninstall the older client using **Add or Remove Programs** in the **Control Panel**.

When the users install and launch the software, they are presented with a login dialog box. They provide their login credentials, and then click **Manage Servers** to provide the server URL, which you have provided. See the section Configuration file on page 29 for more information.

Silent Installation

This section provides details about using **MSIEXEC** to deploy TSCG client applications silently. By configuring the MSI properties provided for TSCG and described in the following table, you can

control the installation location and the client configuration, as well as certain other startup information, such as whether to show or hide the TSCG login dialog..

Table 4.1: *TSCG MSI properties.*

Property	Description
TARGETDIR	The path to the install client.
SERVERADDRESSLIST	A semicolon separate list of TSCG server URLs of the form http://<host>:<port> .
SHOWLOGINDIALOGATSTARTUP	If true (the default), specifies that the TSCG login dialog is displayed when the user starts the client application. If set to false, the dialog is not displayed unless the startup encounters an error, in which case the dialog is displayed.

Example: silent installation of the client

The following command installs the TSCG client application silently in the specified directory, and points the client at the servers tscg01 and tscg02.

```
msiexec /qn /i TSCG_Client_setup.msi TARGETDIR="C:\Program  
Files\TIBCO\Spotfire\Clinical Graphics\2.2.0"  
SERVERADDRESSLIST=http://tscg01:8080;http://tscg02:8080  
SHOWLOGINDIALOGATSTARTUP=false
```

MANAGING TEMPORARY FILES

By default, the TSCG client removes temporary files when it shuts down. If for any reason the TSCG client loses contact with the server and does not clean up the temporary files, it removes them on its next startup. Because of this design, typically you do not need to worry about removing temporary files on the server.

If your team is using Clinical Graphics in a SAS production environment, the temporary files are not removed, because they are not using the TSCG client application. In this case, the administrator is responsible for removing the temporary files.

Note

For more information on using TSCG in a SAS production environment, see the PDF **Working in Production Mode** in the **Advanced Reading and Reference** section of the TSCG Help.

(To launch TSCG Help, in a browser, go to <http://<servername>:8080/tscg/help>.

By default, Spotfire Statistics Services temporary TSCG files are stored as follows:

- On a Windows server, `c:\Program Files\TIBCO\statsvcs45\service_name\data\tscg\files\Results\Users\<username>`.
- On a UNIX/Linux server, `/opt/TIBCO/statsvcs45/service_name/data/tscg/files/Results/Users/<username>`.

These files appear in directories named using unique identifiers. For example, they would appear as:

- `SPSERVER_HOME/data/tscg/files/Results/Users/jdoe/8397e81383dc3g26b72123b26aee5c67`

CUSTOMIZING CLIENT STARTUP

After the TSCG client is installed (either through a manual process or through a silent installation), you can provide the following command-line switches to customize further the client startup.

Table 4.2: *TSCG startup command line switches.*

Switch	Description
-nodialogs	Specifies that the startup dialog is not displayed.
-serverurl	The specified TSCG server; for example http://servername:8080 .
-username	Specifies the user name to use to log onto the server.
-password	Specifies the password for the user logging onto the server, if authentication is enabled.

Example

```
Spotfire.ClinicalGraphicsClient.exe -serverurl http://  
myservername:8080  
[-username username -password password]
```

TROUBLESHOOTING

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BASIC SERVER TROUBLESHOOTING

When you are diagnosing problems with TSCG client connectivity, users' inability to create graphs, and other problems, first check the status of the server. In your browser, connect to the following URLs:

- **`http://servername:portnumber/SplusServer`.**
If you cannot reach this URL, the server is not available. Open **Administrative Tools > Services**. Stop and restart the service.
- **`http://servername:portnumber/SplusServer/api/v8/jobs`.**
This URL lists all jobs run or running on the server, along with status. Check to make sure no jobs are blocking the server.
- **`http://servername:portnumber/SplusServer/api/v8/function/search`.**
Running this simple S-PLUS job displays results indicating whether the TSCG package is appear the search list. If it does not, TSCG is not running.
- **`http://servername:portnumber/SplusServer/api/v8/administration/ExtendedServerInfo`.**
Running this administrative task reports the server version.

After running these server tests, try some of the following tasks to explore issues with TSCG.

- **`http://servername:portnumber/tscg`.**
If you see the TSCG landing page, you know that the TSCG webapp is deployed and available
- **`http://servername:portnumber/tscg/conf`.**
If you see the contents of the TSCG **conf.xml**, you know the XML is well-formed. Review the contents to make sure your paths and file mappings are correct.
- **`http://servername:portnumber/tscg/version_info.txt`.**
Check to make sure you are running the correct version.

If all of these simple tests work, log in to the server and explore the following log files in **SPSERVER_HOME/tomcat/logs**, starting with:

- **SplusServer.log**

- **tscg.log**
- **catalina.XXX.log** (where *XXX* is the current date).

Other Tomcat logs can be useful, but the above three offer the most information.

Validating User Account Permissions

If you encounter problems with service startup, check to ensure that the service user account you specified (described in detail in the section Preparing Permissions on Windows on page 10) has the appropriate permissions for any local or remote resources used by the server.

More specifically:

- Any required domain resources (for example, data or graph repositories you might map to via a UNC path).
- For a stand-alone installation, read and write access to the Spotfire Statistics Services installation directory and all subdirectories. (For example, this allows results to be written to the WebDAV directory. It also allows one to download the client from the Clinical Graphics landing page.)
- For a cluster installation, read and write access to the shared directory used for the cluster. We refer to this directory as **SPSERVER_SHARE**. (For example, this allows results to be written to the WebDAV directory. It also allows one to download the client from the Clinical Graphics landing page.)

After installing Spotfire Statistics Services, check that your server has read and write access to all necessary directories:

1. In **SPSERVER_HOME**, right-click the **Data** directory.
2. Click **Properties**.
3. Click the **Security** tab.
4. In the **Permissions** box, select **Full Control**.
5. Select **User Account** or **Add Service Account**.
6. Click **Replace permission entries on all child objects with entries shown here that apply to child objects**. This option propagates the permission changes throughout the installation directories.

TROUBLESHOOTING CONFIGURATION ERRORS

If a user encounters server configuration errors with TSCG (either in the client or in production mode), the help instructs the user to see the server admin. These errors occur because of problems with environment variable settings in the file **TSCG_HOME\init-tscg.ssc**. The errors include those in Table 5.1. The error messages provide the information you need to correct the problems.

Table 5.1: *Server configuration errors*

Error ID	Error
ID-TSCG-2E	The TSCG_XSL_FILENAME environment variable is not set. Cannot locate XSL file.
ID-TSCG-3E	The TSCG_FILE_PATH_ROOT environment variable must be set on the server when TSCG_FILE_DO_HTTP_PUT is set to false.
ID-TSCG-4E	The TSCG_FILE_HTTP_ROOT environment variable must be set on the server when TSCG_FILE_DO_HTTP_PUT is set to false.
ID-TSCG-6E	TSCG_FILE_PATH_ROOT environment variable must be set on the server when TSCG_FILE_DO_HTTP_PUT is set to false.
ID-TSCG-7E	TSCG_FILE_HTTP_ROOT environment variable must be set on the server when TSCG_FILE_DO_HTTP_PUT is set to false.

INVALID DATA PATH ERROR

The server must have the same access to a given data repository specified in the **conf.xml** as the client application. If the server does not have read/write access, an invalid path error message appears in the engine log.

For example, if you add a worker node to a cluster, but you have not granted access to the necessary data paths, an error message in the session's engine log appears indicating that the worker node has used an invalid data path.

For example, if you entered the following path:

```
<Path Name="TESTINVALID" IsUserPath="false">
    C:\TEST\SAMPLE
</Path>
```

The invalid path error message appears in the engine log at **SPSERVER_HOME/data/results/*MostRecentSession*/engine.log**, where **MostRecentSession** follows the format **90D53B2ED0FF718E**.

The error message appears as follows:

```
1012 [main] DEBUG com.insightful.splusserver.engine.
messaging.SplusMessageHandler - Sending message of
type output with argument Warning messages:
    Entry found cannot be accessed by server:
    c:/test/sample in: .First.lib(lib.loc,section)
```

Add the appropriate access to the server or worker node to solve this problem. For more information about setting appropriate access, see the section [Setting the Service User](#) on page 14.

Chapter 5 Troubleshooting

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