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Reference

The correct bibliographic reference for this document is as follows:

Spotfire S+® 8.2 Installation and Administration Guide for Windows® and UNIX®/LINUX®, TIBCO Software Inc.

Technical Support

For technical support, please visit http://spotfire.tibco.com/support and register for a support account.
TIBCO SPOTFIRE S+ BOOKS

Note about Naming

Throughout the documentation, we have attempted to distinguish between the language (S-PLUS) and the product (Spotfire S+).

- “S-PLUS” refers to the engine, the language, and its constituents (that is objects, functions, expressions, and so forth).
- “Spotfire S+” refers to all and any parts of the product beyond the language, including the product user interfaces, libraries, and documentation, as well as general product and language behavior.

The TIBCO Spotfire S+® documentation includes books to address your focus and knowledge level. Review the following table to help you choose the Spotfire S+ book that meets your needs. These books are available in PDF format in the following locations:

- In your Spotfire S+ installation directory (SHOME\help on Windows, SHOME/doc on UNIX/Linux).
- In the Spotfire S+ Workbench, from the Help ► Spotfire S+ Manuals menu item.
- In Microsoft® Windows®, in the Spotfire S+ GUI, from the Help ► Online Manuals menu item.

<table>
<thead>
<tr>
<th>Information you need if you...</th>
<th>See the...</th>
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<tr>
<td>Must install or configure your current installation of Spotfire S+; review system requirements.</td>
<td>Installation and Administration Guide</td>
</tr>
<tr>
<td>Want to review the third-party products included in Spotfire S+, along with their legal notices and licenses.</td>
<td>Licenses</td>
</tr>
<tr>
<td>Information you need if you...</td>
<td>See the...</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Are new to the S language and the Spotfire S+ GUI, and you want an introduction to importing data, producing simple graphs, applying statistical models, and viewing data in Microsoft Excel®.</td>
<td>Getting Started Guide</td>
</tr>
<tr>
<td>Are a new Spotfire S+ user and need how to use Spotfire S+, primarily through the GUI.</td>
<td>User’s Guide</td>
</tr>
<tr>
<td>Are familiar with the S language and Spotfire S+, and you want to use the Spotfire S+ plug-in, or customization, of the Eclipse Integrated Development Environment (IDE).</td>
<td>Spotfire S+ Workbench User’s Guide</td>
</tr>
<tr>
<td>Have used the S language and Spotfire S+, and you want to know how to write, debug, and program functions from the <strong>Commands</strong> window.</td>
<td>Programmer’s Guide</td>
</tr>
<tr>
<td>Are familiar with the S language and Spotfire S+, and you want to extend its functionality in your own application or within Spotfire S+.</td>
<td>Application Developer’s Guide</td>
</tr>
<tr>
<td>Are familiar with the S language and Spotfire S+, and you are looking for information about creating or editing graphics, either from a <strong>Commands</strong> window or the Windows GUI, or using Spotfire S+ supported graphics devices.</td>
<td>Guide to Graphics</td>
</tr>
<tr>
<td>Are familiar with the S language and Spotfire S+, and you want to use the Big Data library to import and manipulate very large data sets.</td>
<td>Big Data User’s Guide</td>
</tr>
<tr>
<td>Want to download or create Spotfire S+ packages for submission to the Comprehensive S-PLUS Archive Network (CSAN) site, and need to know the steps.</td>
<td>Guide to Packages</td>
</tr>
<tr>
<td>Information you need if you...</td>
<td>See the...</td>
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<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Are looking for categorized information about individual S-PLUS functions.</td>
<td><em>Function Guide</em></td>
</tr>
<tr>
<td>If you are familiar with the S language and Spotfire S+, and you need a reference for the range of statistical modelling and analysis techniques in Spotfire S+. Volume 1 includes information on specifying models in Spotfire S+, on probability, on estimation and inference, on regression and smoothing, and on analysis of variance.</td>
<td><em>Guide to Statistics, Vol. 1</em></td>
</tr>
<tr>
<td>If you are familiar with the S language and Spotfire S+, and you need a reference for the range of statistical modelling and analysis techniques in Spotfire S+. Volume 2 includes information on multivariate techniques, time series analysis, survival analysis, resampling techniques, and mathematical computing in Spotfire S+.</td>
<td><em>Guide to Statistics, Vol. 2</em></td>
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## INTRODUCTION

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<tr>
<td>Your Spotfire S+ License</td>
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</table>
This manual contains information on installing and administering all editions of TIBCO Spotfire S+® 8.2 for Windows®, UNIX®, and Linux®.

This manual is written primarily for an audience of Windows, UNIX, and Linux systems administrators. In one typical scenario, a Windows or UNIX systems administrator uses this guide to install Spotfire S+ on a network so that multiple users can access Spotfire S+ simultaneously.
SUPPORTED PLATFORMS AND SYSTEM REQUIREMENTS

Spotfire S+ for Windows (32-bit)

TIBCO Spotfire S+® 8.2 for 32-bit Windows is supported for the following platforms:

Table 1.1: Supported platforms for Windows® systems (32-bit).

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Disk Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Vista® SP2</td>
<td>500 MB</td>
</tr>
<tr>
<td>Windows 7®</td>
<td>500 MB</td>
</tr>
<tr>
<td>Windows XP® SP3</td>
<td>500 MB</td>
</tr>
</tbody>
</table>

Spotfire S+, the minimum recommended system configuration is a Pentium III processor with 512MB of RAM.

You can run Spotfire S+ for 32-bit Windows on a 64-bit Windows computer.
Spotfire S+ for Windows (64-bit)

Spotfire S+ 8.2 for 64-bit Windows is supported for the following platforms:

Table 1.2: Supported platforms for Windows® systems (64-bit).

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Disk Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Vista</td>
<td>500 MB</td>
</tr>
<tr>
<td>Windows 7</td>
<td>500 MB</td>
</tr>
</tbody>
</table>

Important

Spotfire S+ for 64-bit Windows:

- Includes support for Spotfire S+ Batch, the Spotfire S+ Console and the Spotfire S+ Workbench. It does not include the Spotfire S+ GUI.
- Works only on computers running a 64-bit Windows operating systems. It does not work on computers running 32-bit Windows.
- You can run both 64-bit and 32-bit versions of Spotfire S+ on the same 64-bit system.

Spotfire S+ for UNIX/Linux

Spotfire S+® 8.2 for UNIX®/Linux® 32-bit and 64-bit is supported on the following platforms and operating systems. The minimum recommended disk space for installing and running Spotfire S+ is also provided:

Table 1.3: Supported platforms for UNIX/Linux systems.

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Disk Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solaris® 2.8, 2.9, 2.10 (SPARC 32-bit)</td>
<td>475 MB</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux WS 4 and 5 (x86, x64)</td>
<td>475 MB (32 bit) 500 MB (64 bit)</td>
</tr>
<tr>
<td>SUSE Linux Enterprise 10 Service Pack 2 (x86, x64)</td>
<td>475 MB (32 bit) 500 MB (64 bit)</td>
</tr>
</tbody>
</table>
Note that Spotfire S+ no longer supports HP-UX.

Previous versions of the listed operating systems might function with Spotfire S+, but they are not supported.

Spotfire S+ run from the command line requires a minimum of 60 MB RAM. The Java GUI requires an additional 100 MB to run. Note that these values are minimal requirements; if you work with moderate-sized data sets, these numbers might be insufficient for your needs.

**Note**

As of version 8.1, the Spotfire S+ Java-based GUI is deprecated. If you want to use a GUI with Spotfire S+, use the Spotfire S+ Workbench.
YOUR SPOTFIRE S+ LICENSE

In previous versions of S-PLUS, you were required to license your product using the FLEXnet license manager. The license manager is no longer used in Spotfire S+, as of version 8.1.
INSTALLING TIBCO SPOTFIRE
S+ 8 FOR WINDOWS

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INSTALLATION STEPS

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<tr>
<td>On Microsoft Windows®, both the installation and uninstallation include Microsoft Excel® Wizard macros. Such macro functionality is disabled by default in the Excel 2007 and later security settings. To run the installation or uninstallation successfully, first launch Excel and change your macro security settings to allow the macros to run.</td>
</tr>
</tbody>
</table>

1. From the TIBCO Spotfire S+® 8.2 download media, click the application to install it on your computer. The TIBCO Spotfire S+ Setup screen appears.

2. In the TIBCO Spotfire S+ Setup, walk through the Setup wizard. You can accept defaults in the screens that appear, or you can change the options such as the installation directory. If you install 32-bit Spotfire S+ on a 64-bit system (such as Windows 7), the default installs the Spotfire S+ program files in the following folder:

   C:\Program Files (x86) \TIBCO\splus82

   If you install 32-bit Spotfire S+ on a 32-bit system, or if you install 64-bit Spotfire S+ on a 64-bit system, the default installs the Spotfire S+ program files in the following folder:

   C:\Program Files\TIBCO\splus82

<table>
<thead>
<tr>
<th>Reminder</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can install either or both 32-bit and 64-bit Spotfire S+ on a 64-bit system. The 64-bit version will not work on a computer running a 32-bit operating system</td>
</tr>
</tbody>
</table>

3. After the Spotfire S+ installation has completed, if you have purchased Spotfire S+ modules, return to the TIBCO Download site and locate the modules to install.

   Available modules include:

   • TIBCO Spotfire S+FinMetrics.
   • TIBCO Spotfire NuOpt for S+. |
• TIBCO Spotfire S+SeqTrial.

**Note**

The modules Wavelets, Environmental Statistics, and Spatial Statistics are now included as packages with the core Spotfire S+ product and require no separate installation.

- Wavelets is available for the 32-bit platform only.
- Environmental Statistics is available on Windows 32-bit platform only. You can load it using the command `library(envstats)`.
- The Spatial Statistics package is loaded with the command `library(spatialstats)`. (If you try to load it using `library(spatial)`, you will load the spatial package that is part of the MASS packages from Brian Ripley.)

For more information about new packages, see the Release Notes.

a. Select the module to download from the list. (You can download and view module release notes and installation instructions from this page, too.)

b. Click **Download** and save the installation file(s) to your computer.

c. Browse to the location where the installation file(s) were placed and take the appropriate action (either run the installation executable or extract the files for setup).

d. Accept all defaults in the installation instructions. By default, the module is stored in the corresponding `SHOME/module/[module name]` folder. For example, TIBCO Spotfire S+FinMetrics is installed by default at:

```
C:\Program Files\TIBCO\splus82\module\finmetrics
```

This should successfully complete your Spotfire S+ installation.
AUTOMATED INSTALLATION

If you are a network administrator and want to automate the process of installing Spotfire S+ on the desktop machines in your network, you can do this easily by using the automatesample.ini script, located in the file TIB_sf_s+_8.2.0_win_x86_32.exe (for 32-bit Windows) or TIB_sf_s+_8.2.0_win_x86_64.exe (for 64-bit Windows).

1. Download (but do not run) the executable to your computer.
2. Unzip the executable file to display its contents. (Use pkzip, WinZip, or a similar application.)
3. In the resulting unzipped folder, locate the script automatesample.ini and double-click it to open it. This script contains instructions that mimic the Spotfire S+ setup.
4. Review the script’s keys and their descriptions. The descriptions give the purpose of, and available options for, each key. If a key value is not specified or is missing, a dialog for that value appears during setup.
5. Edit the values for the keys to customize the setup, such as specifying the default installation type (Typical, Compact, or Custom) or default installation directory.

Instructions are provided at the top of the script for running it, including the locations of build and log files.

**Note on setting the CustomComponentListFile key**

Use this key to set the specific features to install (for example, PDF documentation and desktop icons), and those you do not want to install (for example, example files). Copy featurelist.txt (located in the directory at the top level of the downloaded media) to another directory and modify it as needed. Double-click featurelist.txt for more information on how to use it.
Basic Installation

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Step 4: Running Spotfire S+ 16
BASIC INSTALLATION

The TIBCO Spotfire S+® 8.2 for UNIX®/Linux® installation, configuration, and verification process consists of four steps:

1. Unpacking and copying the files from the TIBCO download site to an appropriate place on your system.
2. Running the CONFIGURE script (to select various configuration options).
3. Running the INSTALL script.
4. Running Spotfire S+.

The following section provides detailed information for each step.

Step 1: Unpacking and Copying the Files

If you have a previous edition of Spotfire S+ already installed on your system, do not install the new edition in the same directory tree. The existing installation should be left intact until after the new installation is up and running, and until you are satisfied that it is no longer required for any reason.

- If this is a new installation, and you are the only user, you can create the file system in your home directory and run the following steps logged into your own user account.

- If this is a new installation, and it is going to be shared by multiple users in a globally-visible location, we recommend that you ask your system administrator to create a new user account called splus, and then use that account's home directory as the installation directory. (This UNIX group should include those users who are likely to want to run Spotfire S+.)

Run most of the installation logged in as the user splus. For this account, set permissions so everyone on your system can use Spotfire S+:
To unpack and copy the files:

1. Create a new directory for the Spotfire S+ tree, and \texttt{cd} to that directory. Be sure the directory you create is on a file system with adequate disk space.

2. Create a new directory for the tar file, and then download the tar file from the download site. This file is named as follows: \texttt{TIB\_sf\_s+\_8.2.0\_platform.TZ}

where platform specifies the particulars of your operating system. (for example: \texttt{TIB\_sf\_s+\_8.2.0\_linux24g\_23\_x86\_64.TZ}).

3. Change to the directory you created in step 1, and as either a regular user (yourself or \texttt{splus}), unpack the tar file that you downloaded into the new directory using \texttt{tar} as follows:

\begin{verbatim}
  cat /[mount_point]/TIB\_sf\_s+\_8.2.0\_platform.TZ | uncompress | tar xvf -
\end{verbatim}

where \texttt{[mount_point]} is the absolute path to the directory containing the tar file.

Depending on your platform, downloaded files can be listed in lowercase or UPPERCASE. After mounting the directory, use the \texttt{ls} command to see the format shown on your system. Use the same format in the \texttt{cat} command as shown on your system.

If you are installing as superuser (or root), the files might be restored with the user and group identifiers that existed when the files were tarred. On some platforms (including Solaris), the \texttt{-o} flag to tar assigns these identifiers to the user extracting the files.

If your system has the \texttt{zcat} command, you can use it to shorten your extraction command (\texttt{zcat} combines the \texttt{cat} and \texttt{uncompress} commands):
Step 2: Running the CONFIGURE Script

The purpose of running the CONFIGURE script is to select various options for creating the script for starting Spotfire S+. If you ran Step 1 logged in as the user splus, also run CONFIGURE as the user splus.

Within the new Spotfire S+ home directory, run the CONFIGURE script:

```
./CONFIGURE
```

The license agreement is displayed for your review. When you have finished reading this agreement, press q (quit), wait a moment for the text to appear, and when it is displayed, you have an option to accept (1) or to not accept (2) the agreement.

The CONFIGURE script displays the following:

```
Configuration Options:
1:    About This Menu
2:    Graphics Hard Copy Printing
3:    Help File Printing
4:    Destinations and Name of Splus Script
5:    [There is no option 5]
6:    Installation of Splus man page
0:    Exit this Menu
```

Your selections during this step depend on whether you have an existing version of this product installed or whether this will be a new installation.

If you have an existing installation:

This section applies if you have a previous edition of S-PLUS or Spotfire S+ installed on your system, and you would like to run Spotfire S+ 8.2 alongside your currently installed version. If you are upgrading from a previous edition, skip to the section on new installations below.
Part of the configuration and installation process is to create a startup script for Spotfire S+. The startup script for the new version of Spotfire S+ should be given a name that is separate and distinct from the name of the startup script for any existing installations. For example, if you have S-PLUS 8.0.x or earlier installed with a startup script named $plus$, and you are currently installing Spotfire S+ 8.2, you have the following choices:

1. Rename the existing script as $plus8.0.x$ and name the new script $plus$
2. Leave the name of the existing script as $plus$ and name the new script $plus8.2$.

For most upgrades, option 4, Destinations and Name of Splus Script, is the only option that you must address. In most cases, you should leave the default destination (/usr/local/bin) alone and select a new name for the script as discussed above. After that, select option 0 to exit the script.

**If this is a new Spotfire S+ installation**

For most new installations, you can accept all defaults. In that case, select each of the options to confirm the information, and then select Exit this Menu. You must run configure, even if you accept all of the defaults.

The default is to name the startup script $plus$ and to install it in /usr/local/bin. To give the startup script a different name, or to install it in a different location, choose option 4, Destinations and Name of Splus Script.

**Step 3: Running the INSTALL Script**

After running configure, run install, which copies the information you entered in the configure step to the appropriate directory.

Run install as root (particularly if you accept the default location for the startup script of /usr/local/bin):

```
./INSTALL
```
from within your installation directory.

<table>
<thead>
<tr>
<th>Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>When you have completed this installation as root, log out and log back in using your normal user account name.</td>
</tr>
</tbody>
</table>

**Step 4: Running Spotfire S+**

Before starting Spotfire S+, you must:

1. Set your DISPLAY environment variable to your local machine.

   Check if your DISPLAY variable is set already by looking at the output from
   ```
   echo $DISPLAY
   ```

   to be sure. To set your display from a C-like shell (csh, tcsh, and so on), use the `setenv` command:
   ```
   setenv DISPLAY <display_name>
   ```

   where `<display_name>` is the name of your local machine.

   From the Bourne- and Korn-like shells (including sh, ksh, bash, etc.), use the following commands:
   ```
   DISPLAY=<display_name>; export DISPLAY
   ```

   To use the Java-related features of Spotfire S+, you must be able to connect to your local X window server. Therefore, you must have the environmental variable DISPLAY set, and the X window server on your local machine must allow the Spotfire S+ server to create windows on your machine; see the UNIX programs `xauth` or `xhost`. Typically, if you can run `xclock` on your machine, then Spotfire S+ should also be able to access the X server.

**Install the pkgutils Library**

After you have installed Spotfire S+, enter the following from a UNIX/Linux shell prompt:

```
./INSTALL_PKGUTILS
```

This installs the pkgutils library in your `SHOME/library`, where `SHOME` is your installation directory. You must be connected to the Internet to run this script, and you must have permission to write in the Spotfire S+ installation directory.
**Create a Spotfire S+ Chapter**  
Creating a Spotfire S+ chapter is necessary for storing the data objects and external files you create in Spotfire S+. The following commands create a Spotfire S+ chapter named *mysplus* for you to work in (be sure you don't have a *mysplus* directory in your home directory before typing these commands):

```
% cd
% mkdir mysplus
% cd mysplus
% Splus CHAPTER
```

**Note**  
If you do not create a chapter, Spotfire S+ automatically creates one for you named *MySwork* the first time you start Spotfire S+.

**Start Spotfire S+**  
You are now ready to start Spotfire S+.

You can launch Spotfire S+ in one of the following modes listed below. (This list includes each mode and the corresponding UNIX command-line expression for launching it.) In all of the commands below, *Splus* refers to the script you use to launch Spotfire S+ 8 on your system.

To run without Java:

```
Splus
```

To run from the command line supporting Java calls, Java graphics, and the Java help interface:

```
Splus -j
```

To run from the command line with the graphical user interface:

```
Splus -g or Splus -g &
```

**Note**  
As of version 8.1, the Spotfire S+ Java-based GUI is deprecated. If you want to use a GUI with Spotfire S+, use the Spotfire S+ Workbench.

The second command (using the ampersand &) puts the GUI process into the background, freeing your xterm for other uses.
To attach the Spotfire S+ Big Data Library before running Spotfire S+:

\texttt{Splus -bigdata}

To run the Spotfire S+ Workbench:

\texttt{Splus -w | -workbench}

You can add the \texttt{-e} flag to either of the first two modes to enable command-line editing. The \textbf{Commands} window in the graphical user interface always allows basic editing.

Spotfire S+ includes two additional flags, \texttt{-jit} and \texttt{-helpoff}:

The \texttt{-jit} flag works with the \texttt{-g}, \texttt{-j}, and \texttt{-userapp} flags and allows you to turn on the Java just-in-time compiler. This makes the graphical user interface and help system run faster but introduces instabilities that often lead to crashes. In particular, the just-in-time compiler often crashes while repainting graphical user interface elements such as the JavaHelp window and the Data window.

The \texttt{-helpoff} flag is useful only with the \texttt{-g} flag. It turns off the automatic invisible startup of the help system. The invisible startup improves initial responsiveness of the help system but adds a significant memory footprint to the current session. If you wish to optimize your available memory, this flag might prove useful.

\textbf{Load the pkgutils Library}

From Spotfire S+, enter the following:

\texttt{library(pkgutils)}

to load the pkgutils library and access the pkgutils functions. For more information, see the \textit{TIBCO Spotfire S+ Guide to Packages}, available in your \texttt{SHOME/doc} directory (\texttt{spluspackages.pdf}).
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