

IBM SPSS Modeler Server 14.2 for UNIX Installation Instructions

IBM® SPSS® Modeler Server can be installed and configured to run in distributed analysis mode together with one or more client installations. This provides superior performance on large datasets, since memory-intensive operations can be run on the server without downloading data to the client computer. At least one IBM® SPSS® Modeler Client installation must be present to run an analysis.

System Requirements

The minimum hardware and software requirements for IBM® SPSS® Modeler Server are as follows:

- **Operating system.** IBM AIX® 6.1 or 7.1 for 64-bit POWER systems; HP-UX 11i V3 for 64-bit Itanium systems; Oracle Solaris™ 9.x or 10 for 64-bit SPARC systems; Red Hat Enterprise Linux 5.x for 32-bit x86 systems; Red Hat Enterprise Linux 5.x or 6.x for 64-bit x64 or IBM System z systems; Red Hat Enterprise Linux Advanced Platform 5.x for 32-bit x86 systems; Red Hat Enterprise Linux Advanced Platform 5.x or 6.x for 64-bit x64 or IBM System z systems; SuSE Linux Enterprise Server 10 or 11 for 64-bit x64 or IBM System z systems
- **Hardware.** PowerPC processor, 233MHz or faster and IBM System p for IBM AIX; Itanium processor for HP-UX; UltraSPARC II (or better) for Solaris; Pentium or Pentium-class processor or higher for 32-bit Linux; x64 (AMD 64 and EM64T) processor family or IBM System z for 64-bit Linux
- **Minimum free disk space.** 1 gigabyte (GB) is recommended. 2 GB recommended if running on HP-UX.
- **RAM.** 4 GB is recommended.
- **Virtual environment.** The following virtual environments support IBM® SPSS® Modeler Server.
 - IBM PowerVM Hypervisor for IBM AIX
 - IBM PR/SM or z/VM for Linux for IBM System z
 - VMWare ESX Server 4.1
 - VMWare vSphere 4.0
- **Cluster environment.** The following cluster environments support SPSS Modeler Server.
 - IBM HACMP/RSCT for IBM AIX
 - IBM WebSphere App Server 64-bit
 - Microsoft Cluster Service for Windows
 - Oracle Solaris Cluster
 - Oracle WebLogic App Server 64-bit
 - Red Hat Cluster Suite for Red Hat Enterprise Linux

- If using physical installation media, a DVD-ROM drive.
- A network adaptor running the TCP/IP network protocol.

Client software. The client software must be at the same release level as the IBM SPSS Modeler Server software.

Note: We recommend that you install a copy of the client software on your Windows desktop computer. You may need it to test the IBM SPSS Modeler Server connection and to test the data sources that you configure. It might also be useful for diagnosing other problems. If you downloaded IBM SPSS Modeler Server, you can also download the client. If you have physical installation media, your product package contains a client installation disk. Please do not install the client on the same computer as IBM SPSS Modeler Server.

Additional Requirements

You must ensure that kernel limits on the system are sufficient for the operation of IBM® SPSS® Modeler Server. The data, memory, and file ulimits are particularly important and should be set to unlimited within the SPSS Modeler Server environment. To do this:

- ▶ Add the following commands to *modelersrv.sh*:

```
ulimit -d unlimited
```

```
ulimit -m unlimited
```

```
ulimit -f unlimited
```

- ▶ Restart SPSS Modeler Server.

Solaris.

In addition to aforementioned system requirements, installing on Solaris also requires the following version specific patches. Patches can be downloaded from <http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage>.

- *Solaris 2.9 Patch IDs* : 111711-16, 111712-16, and 111722-05 (C++)
- *Solaris 2.10 Patch IDs*: 119963 (C++)

You must also have the library */usr/lib/iconv/646%UTF-8* installed on your system. If this is not currently installed, please install the *SUNWiniu8* or *SUNWiniu8x* packages, which will install this library as part of the Indic iconv modules for UTF-8.

Linux 32-bit.

The following additional packages are needed to run properly. You can download these packages from the Red Hat Network. You may need to register to access the network (<https://rhn.redhat.com/network/software/search.pxt>). Use the search feature to search and drill down to each specific package version.

- The *libstdc++* package (version: *libstdc++-3.2.3-X.Y.i386* where *X.Y* is 22.1 or later).

- The *libgcc* package (version: *libgcc-3.2.3-X.Y.i386* where *X.Y* is 22.1 or later).
- The *compat-libstdc++* package (version: *compat-libstdc++-33-3.2.3-X.Y.i386* where *X.Y* is 47.3 or later).

Linux 64-bit.

The following additional packages are needed to run properly. You can download these packages from the Red Hat Network. You may need to register to access the network (<https://rhn.redhat.com/network/software/search.pxt>). Use the search feature to search and drill down to each specific package version.

- The *libstdc++* package (version: *libstdc++-3.2.3-X.Y.x86_64* where *X.Y* is 22.1 or later).
- The *libgcc* package (version: *libgcc-3.2.3-X.Y.x86_64* where *X.Y* is 22.1 or later).
- The *compat-libstdc++* package (version: *compat-libstdc++-33-3.2.3-X.Y.x86_64* where *X.Y* is 47.3 or later).

AIX.

In addition to aforementioned system requirements, installing on AIX also requires the following:

- XL C++ runtime should be at least at level 8.0.0.9 (lspp -l xlC.rte). The filesets that contain the libraries is called IBM C++ Runtime Environment Components for AIX and can be downloaded from <http://www.ibm.com/software/awdtools/xlcpp/support/>.
- XL FORTRAN runtime should be at least at level 10.1.0.4 (lspp -l xlftrte). The filesets that contain the libraries is called XL Fortran Enterprise Edition V10.1 for AIX Runtime Environment and can be downloaded from <http://www.ibm.com/software/awdtools/fortran/xlfortran/support/>.

HP-UX.

In addition to aforementioned system requirements, installing on HP-UX also requires that C++ Runtime libraries be installed. You can download them as patch PHSS_26946, as shown in the following table. To access the patches, go to <http://www4.itrc.hp.com/service/patch/mainPage.do>. Registration is required but is free of charge.

Upgrading

If you do not currently have IBM® SPSS® Modeler Server installed on the target computer, skip to [Installing](#) on p. 4. If you do have an installation on the target computer, decide whether to:

- Replace the current version. You must replace the old version if the new version is a minor release compared to the old version. You can check if the release is minor by looking at the first two parts of the version number. If these are the same as the installed version, the new version is a minor version compared to the installed version. For example, if the new version is 13.1 and the old version is 13.0, the new version is a minor release and you must replace the old version.

or

- Install the new version in addition to your current version. You can install the new version in addition to the old version if the new version is a major release compared to the old version. For example, if the new version is 14.0 and the old version is 13.1, you can install the new version in addition to the current version.

To Replace the Current Version

- ▶ Back up your existing configuration file (*options.cfg*) to another location. The configuration file is located in the *config* directory. Note that configuration settings specified in this file can also be modified using IBM® SPSS® Collaboration and Deployment Services Deployment Manager. For more information, see the topic [Installing the Administration Console for IBM SPSS Collaboration and Deployment Services Deployment Manager](#) on p. 5 .
- ▶ Remove the old version. Follow the steps in [Uninstalling](#) on p. 8 .
- ▶ Install the new version. Follow the steps in [Installing](#) on p. 4 .
- ▶ Compare your old configuration file with the new configuration file and transfer any options settings that you want to preserve in the new file. See the *IBM SPSS Modeler Server and Performance Guide* for information about the options in the configuration file. Do not replace the new file with the old one.

To Add the New Version

- ▶ Follow the steps in [Installing](#) on p. 4 , with the following comments.
 - **Destination directory.** Install the new version in the different location from the old version.The port number and temporary file location are specified in the administration console. Refer to the *IBM SPSS Modeler Server and Performance Guide* for more information. You can also make these changes manually in the configuration file (*options.cfg*) located in the *config* directory.

Whenever you install a new version, be sure to distribute IBM SPSS Modeler Server product's host name and port number to the end users.

Installing

- ▶ Log in as *root*.
- ▶ Insert the IBM® SPSS® Modeler Server installation disk into the drive and ensure that you can access the drive. On Solaris, the volume manager (the *vold* daemon) must be running. On HP-UX, if you have problems installing, ask your administrator to mount the DVD-ROM device using the `-o cdcase` option.
- ▶ Change directories to the DVD mount point.
- ▶ Change directories to the *modeler* directory.
- ▶ Change to the relevant platform directory.

- ▶ Run the `.bin` install script. Make sure the `.bin` can be executed by `root`. For example:

```
./modelerserverlinux64.bin -i console
```
- ▶ Introduction details are displayed. Press Enter to continue.
- ▶ Licensing information is displayed. Read the license, type 1 to accept it, and press Enter to continue.
- ▶ You are prompted to type the installation location. To use the default directory (`/usr/IBM/SPSS/ModelerServer<nn>`, where `<nn>` is the version number), press Enter. If you specify a directory other than the default, make sure that the path name does not contain extended ASCII characters, the space character, or the ampersand (&) character.
- ▶ You are prompted to confirm the installation location. When it is correct, type `y` and press Enter.
- ▶ A pre-installation summary is displayed to confirm your entries so far. Press Enter to continue.
- ▶ A message is displayed to say the installation routine is ready to run. Press Enter to continue.
- ▶ A progress bar is displayed whilst the installation routine runs. When the installation is complete, press Enter to exit from the installer.

After You Install IBM SPSS Modeler Server

This section describes some required and optional steps that you can perform after installation. It does not describe all possible configuration options. You can find information about all the configuration options in the *IBM SPSS Modeler Server and Performance Guide*.

Installing the Administration Console for IBM SPSS Collaboration and Deployment Services Deployment Manager

The IBM® SPSS® Collaboration and Deployment Services Deployment Manager provides a user interface to monitor and configure your IBM® SPSS® Modeler Server installations, and is available free-of-charge to current customers of that product. Deployment Manager can only be installed on Windows computers; however, it can administer IBM SPSS Modeler Server installed on any supported platform.

To install this component:

- ▶ Insert the IBM® SPSS® Modeler Server DVD into the DVD drive. The AutoPlay feature presents a menu.
- ▶ On the AutoPlay menu, click Install Modeler Administration Console, and then follow the instructions that appear on the screen.

Enabling IBM SPSS Statistics Programmability

If you have IBM® SPSS® Statistics installed and you want to be able to call its Python or R plugins through the SPSS Statistics nodes in IBM® SPSS® Modeler Server, you must take the following steps on the UNIX server to enable the plugins.

- ▶ Log in as the superuser.
- ▶ Export environment variables as follows:
 - **Linux or Solaris.** export
LD_LIBRARY_PATH=[plugin_install_directory]/lib:\$LD_LIBRARY_PATH
 - **AIX.** export LIBPATH=[plugin_install_directory]/lib:\$LIBPATH
 - **HP-UX.** export SHLIB_PATH=[plugin_install_directory]/lib:\$SHLIB_PATHwhere *plugin_install_directory* is the directory to which the Python or R plugin is installed.

Starting the Process

IBM® SPSS® Modeler Server runs as a daemon process and has root privileges by default. IBM SPSS Modeler Server can be configured to run without root privileges, with some consequent restrictions on client connections. Refer to the *IBM SPSS Modeler Server and Performance Guide* for more information.

To Start IBM SPSS Modeler Server

IBM SPSS Modeler Server must be started by the **root user**. Start the application by running a startup script, *modelersrv.sh*, which is included in the installation directory. The startup script configures the environment for and executes the software.

- ▶ Log in as *root*.
- ▶ Change to the IBM SPSS Modeler Server installation directory. The startup script must be run from this location.
- ▶ Run the startup script. For example, at the UNIX prompt type:
./modelersrv.sh start

Checking the Server Status

Use the `list` command to get information about what server processes are running and to report process status. For example:

- ▶ At the UNIX prompt, type:
./modelersrv.sh list
- ▶ Look at the output, which is similar to what the UNIX `ps` command produces. If the server is running, you will see it as the first process in the list.

IBM® SPSS® Modeler Server is now ready to accept connections from end users.

Connecting End Users

End users connect to IBM® SPSS® Modeler Server by logging in from the client software. See the *IBM SPSS Modeler Server and Performance Guide* for a description of how the software works and what you need to do to administer it. You must give end users the information that they need to connect, including the IP address or host name of the server machine.

IBM SPSS Data Access Pack Technology

To read or write to a database, you must have an ODBC data source installed and configured for the relevant database, with read or write permissions as needed. The IBM® SPSS® Data Access Pack includes a set of ODBC drivers that can be used for this purpose, and these drivers are available on the IBM SPSS Data Access Pack installation disk shipped with this release. If you have questions about creating or setting permissions for ODBC data sources, contact your database administrator.

Database support in IBM® SPSS® Modeler is classified into three tiers, each representing a different level of support for SQL pushback and optimization, depending on the database vendor. The different levels of support are implemented by means of a number of system settings, which can be customized as part of a Services engagement.

The three tiers of database support are:

Table 1-2
Database support tiers

Support tier	Description
Tier 1	All possible SQL pushback is available, with database-specific SQL optimization.
Tier 2	Most SQL pushback is available, with non-database-specific SQL optimization.
Tier 3	No SQL pushback or optimization—only reading data from, and writing data to, the database.

Supported ODBC Drivers

For the latest information on which databases and ODBC drivers are supported and tested for use with SPSS Modeler 14.2, see the product compatibility matrices on the corporate Support site (<http://www.ibm.com/support>).

Where to Install Drivers

Note that ODBC drivers must be installed and configured on each computer where processing may occur.

- If you are running IBM® SPSS® Modeler in local (standalone) mode, the drivers must be installed on the local computer.
- If you are running SPSS Modeler in distributed mode against a remote IBM® SPSS® Modeler Server, the ODBC drivers need to be installed on the computer where SPSS Modeler Server is installed.
- If you need to access the same data sources from both SPSS Modeler and SPSS Modeler Server, the ODBC drivers must be installed on both computers.

- If you are running SPSS Modeler over Terminal Services, the ODBC drivers need to be installed on the Terminal Services server on which you have SPSS Modeler installed.
- If you are using the IBM® SPSS® Modeler Solution Publisher Runtime to run published streams on a separate computer, you also need to install and configure ODBC drivers on that computer.

Note: If you are using SPSS Modeler Server on UNIX to access a Teradata database you must use the ODBC Driver Manager that is installed with the Teradata ODBC driver. In order to make this change to SPSS Modeler Server please specify a value for `ODBC_DRIVER_MANAGER_PATH` near the top of the `modelersrv.sh` script where indicated by the comments. This environment variable needs to be set to the location of the ODBC Driver Manager that is shipped with the Teradata ODBC driver (`/usr/odbc/lib` in a Teradata ODBC driver default installation). You must restart SPSS Modeler Server for the change to take effect. For details of the SPSS Modeler Server platforms that offer support for Teradata access, and the Teradata ODBC driver version that is supported, see the corporate Support site at <http://www.ibm.com/support>.

Configuring IBM SPSS Modeler Server for Data Access

If you want to use the IBM® SPSS® Data Access Pack with IBM® SPSS® Modeler Server, you will need to configure the startup scripts. This is a critical step because data access will not work otherwise. For instructions, refer to the *IBM SPSS Modeler Server and Performance Guide*.

In-Database Modeling

IBM® SPSS® Modeler supports integrated modeling with Oracle Data Mining, Analysis Services from Microsoft, and IBM Intelligent Miner, allowing customers to leverage the power of their databases by using native algorithms provided by these vendors. You can build, score, and store models inside the database—all from within the SPSS Modeler application, combining the analytical capabilities and ease-of-use of SPSS Modeler with the power and performance of a database.

For more information, see the file *DatabaseMiningGuide.pdf*, available under the *Documentation* folder on the IBM® SPSS® Modeler installation disk.

Uninstalling

Uninstall IBM® SPSS® Modeler Server by removing the program files and, if you have configured the system for automatic startup, disabling automatic startup.

To Remove the Program Files

- ▶ Stop the server process. Instructions for stopping the server process are in the *IBM SPSS Modeler Server and Performance Guide*.
- ▶ Remove the installation directory.

To Disable Automatic Startup

The IBM SPSS Modeler Server includes a script that you can use to configure your system to start the server daemon automatically when the computer is rebooted (the instructions appear in the *IBM SPSS Modeler Server and Performance Guide*).

- Remove the automatic startup files shown in the following table:

Table 1-3
Automatic startup files to remove

Operating system	Remove file(s)
Solaris	<i>/etc/init.d/rc.modeler</i> <i>/etc/rc3.d/S99modelersrv</i> <i>/etc/rc0.d/K99modelersrv</i> <i>/etc/rc1.d/K99modelersrv</i> <i>/etc/rc2.d/K99modelersrv</i>