

*IBM SPSS Modeler Server 19.0 for UNIX
Installation Instructions*



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Chapter 1. Installation instructions

The following instructions are for installing IBM® SPSS® Modeler Server version 19.0.0.

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.

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.

System requirements

To view system requirements, go to <https://www.ibm.com/software/reports/compatibility/clarity/softwareReqsForProduct.html>.

Additional requirements

Client software

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

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

1. Add the following commands to `modelersrv.sh`:

```
ulimit -d unlimited
```

```
ulimit -m unlimited
```

```
ulimit -f unlimited
```

```
ulimit -u unlimited
```

In addition, set the stack limit to the maximum allowed by your system (`ulimit -s XXXX`), for example:

```
ulimit -s 64000
```

2. Restart IBM SPSS Modeler Server.

You also need the *gzip* file compression utility and *GNU cpio* installed and on the PATH in order for the installer to be able to decompress the installation files. In addition, on the machine running SPSS Modeler Server, you should set the locale to `EN_US.UTF-8`.

XL C++ runtime and XL FORTRAN runtime

If installing on PowerLinux, for SPSS Modeler Server to start correctly on P8LE servers (Ubuntu and Red Hat®), you must install the Xpertise Library C++ runtime and the Xpertise Library FORTRAN runtime (version 16.1.1 or later). If these libraries aren't installed, SPSS Modeler Server does not start.

Run the following commands to install the **XL C/C++ runtime** as root:

1.

```
wget https://public.dhe.ibm.com/software/server/POWER/Linux/rte/xlcpp/1e/rhel17/ibm-xlc-compiler-runtime.repo
```

2. `rpm --import repomd.xml.key`
3. `wget https://public.dhe.ibm.com/software/server/POWER/Linux/rte/xlcpp/le/rhel7/repodata/repomd.xml.key`
4. `cp ibm-xlc-compiler-runtime.repo /etc/yum.repos.d/`
5. `yum install libxlc libxlsmp`

Run the following commands to install the **XL FORTRAN runtime** as root, :

1. `wget https://public.dhe.ibm.com/software/server/POWER/Linux/rte/xlf/le/rhel7/ibm-xlf-compiler-runtime.repo`
2. `rpm --import repomd.xml.key`
3. `wget https://public.dhe.ibm.com/software/server/POWER/Linux/rte/xlf/le/rhel7/repodata/repomd.xml.key`
4. `cp ibm-xlf-compiler-runtime.repo /etc/yum.repos.d/`
5. `yum install libxlf libxlsmp`

Note: If you use python nodes on PowerLinux, they need `llibgfortran.so.3` to work as expected. Install `llibgfortran.so.3` by issuing the command: `yum install compat-libgfortran-48`.

Run the following commands to install the **XL C/C++ runtime compiler** as root.

1. Download the runtime compiler from the [link](#) using the following command:

```
wget https://public.dhe.ibm.com/aix/products/ccpp/xlc.rte.linux.16.1.1/IBM_XL_C_CPP_V16.1.1.0_LINUX_ADDONS.tar.gz
```

2. Run the following command and extract the contents of the downloaded file `IBM_XL_C_CPP_V16.1.1.0_LINUX_ADDONS.tgz.gz`.

```
tar -xvf IBM_XL_C_CPP_V16.1.1.0_LINUX_ADDONS.tar.gz
```

3. Run the command: `./install`

Installing

You can install IBM SPSS Modeler Server as *root* or as a non-root user. If your site restricts the use of the *root* password, use an authentication method that supports running as non-root (see the IBM SPSS Modeler Server and Performance Guide). Then install the product as the user who will run the daemon. You should perform all actions as non-root, or perform all actions as root. Note that you need the root password to start and stop the server.

Note: The installation will fail if you attempt to install SPSS Modeler Server on Linux as a user who doesn't have execute permissions for files in `/tmp`. To avoid this, you must either have execute permissions to files within `/tmp` for the InstallAnywhere SPSS Modeler installs to succeed or, if this is not present on your environment, you can set and export `IATEMPDIR` to a location where you do have permissions in order to run the install.

Important: The file system on which you install IBM SPSS Modeler Server must be mounted with the `suid` option. The product will not work correctly if the file system is mounted with the `nosuid` option.

1. **From your downloaded installation media, extract the installation files.** The downloaded media file is a compressed archive. Extract the files in the archive.
2. **From your downloaded installation media, run the installation file.** The downloaded media contains a `.bin` file. Run this file.

3. **Check hard disk space.** In addition to the permanent hard disk drive space specified in <http://www.ibm.com/software/analytics/spss/products/modeler/requirements.html>, you need temporary disk space for the installer files. The installer files are extracted to your system's temporary folder. If not enough space exists in the temporary folder, the installer files are extracted to your home folder. If neither location has enough space, the installer cannot continue. In this case, you can temporarily set the IATEMPDIR environment variable to a location with adequate space. This location must have at least 2.5 gigabytes (GB) of free space.
4. **Check the destination directory.** By default, IBM SPSS Modeler Server is installed to `/usr/IBM/SPSS/ModelerServer/<version>` . If wanted, you can change this path in the graphical installation wizard or the command line installation. If you are going to run the silent installer, you can set the value for `USER_INSTALL_DIR` in `installer.properties`. Regardless, you need read and write permissions to the installation directory, so log on with an account that has sufficient permissions.
Note: If you are upgrading by adding a new version of the product, install the new version in a separate directory.
5. **Change run permissions of the installer.** Be sure that the installer is executable by the user who runs the installer.
6. **Run the installer.** You can run the installer in a graphical user interface, from the command line, or silently. Instructions for each method appear below.
7. **Download the `libnsl.so` library.** After the successful installation of IBM SPSS Modeler Server, run the following command to install the `libnsl.so` library.

```
sudo yum install libnsl
```

If you encounter errors that are related to the missing `libnsl.so.2` shared library on RHEL 9.x, run the following commands:

```
sudo yum install libnsl2
sudo ln -s /usr/lib64/libnsl.so.3 /usr/lib64/libnsl.so.2
```

8. **Download the Boost libraries.** Install the following packages to make sure that IBM SPSS Modeler Server can locate all necessary Boost components:

```
sudo yum install boost-atomic.x86_64 boost-chrono.x86_64 boost-date-time.x86_64 boost-system.x86_64 boost-thread.x86_64
```

For **Linux on System z**, run the following command to install the required Boost libraries:

```
sudo yum install boost-atomic.s390x boost-chrono.s390x boost-date-time.s390x boost-system.s390x boost-thread.s390x
```

For **Linux on System p**, install the required Boost libraries by using the following command:

```
sudo yum install boost-atomic.ppc64le boost-chrono.ppc64le boost-date-time.ppc64le boost-system.ppc64le boost-thread.ppc64le
```

9. **For Linux on System z**, run the following command to download and install the `libcrypt` compatibility library.

```
sudo dnf install libcrypt-compat
```

For Linux on System p, run the following command to download and install the `libcrypt` compatibility library.

```
sudo yum install libcrypt-compat.ppc64le
```

Graphical installation wizard

The graphical installation wizard displays a graphical interface that will ask you about installation parameters. You will need an X Window System.

1. At the UNIX prompt, change to the directory where the installer file was copied or extracted:
2. Run the installer by executing the following command:
`./<installer_name>`
3. After the installation wizard is launched, follow the instructions that appear on the screen.

Command line installation

The command line installation uses command prompts to specify installation parameters.

1. At the UNIX prompt, change to the directory where the installer file was copied or extracted:
2. Run the installer by executing the following command:

`./<installer_name> -i console`

Where *<installer_name>* is the installer *.bin* file.

3. Follow the instructions that appear on the screen.

Silent installation

Silent mode enables the installation without any user interaction. Installation parameters are specified as a properties file.

To complete a silent installation on Linux or UNIX systems:

1. In the same location where you copied the installer files, create an `installer.properties` file.
2. In a text editor, set the `installer.properties` values. The following text shows an example of an `installer.properties` file:

```
=====
# Thu Jan 29 11:35:37 GMT 2015
# Replay feature output
# -----
# This file was built by the Replay feature of InstallAnywhere.
# It contains variables that were set by Panels, Consoles or Custom Code.

#Indicate whether the license agreement been accepted
#-----
LICENSE_ACCEPTED=TRUE

#Server Mode
#-----
SERVERMODE_SELECT_OPTION="\1\"

#Choose Install Folder
#-----
USER_INSTALL_DIR=/usr/IBM/SPSS/ModelerServer/17.0

#Install
=====
```

3. The value for `SERVERMODE_SELECT_OPTION` depends on the type of installation you have. You can choose from the following values:
 - 0 - Non-Production Mode. If you purchased a separate non-production installation, enter this option. This installation cannot be employed for production use.
 - 1 - Production Mode. A production installation is a standard installation of SPSS Modeler Server. It is appropriate for production use.
4. Ensure that the value for `USER_INSTALL_DIR` matches your installation directory location. The directory path cannot contain spaces.
5. Save the file.
6. Run the installer by using the following command:

`./<installer_name> -i silent -f installer.properties`

Where <installer_name> is the installer .bin file.

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*.

Note: Installation logs are placed into the uninstall folder by default. For example:
<Installation_folder_path>/Uninstall_IBM_SPSS_MODELER_SERVER/Logs.

Installing IBM SPSS Modeler Batch

IBM SPSS Modeler Batch provides the complete analytical capabilities of the standard IBM SPSS Modeler Client but without access to the regular user interface. Batch mode allows you to perform long-running or repetitive tasks without your intervention and without the presence of the user interface on the screen. It must be run in distributed mode along with IBM SPSS Modeler Server (local mode is not supported).

For more information, see the *IBM SPSS Modeler Batch User's Guide*.

Installing IBM SPSS Modeler Batch on Linux

1. Change directories to the modelbat directory.
2. Change to the relevant platform directory.
3. Run the .bin install script. Make sure the .bin can be executed by root. For example:

```
./modelerserverlinux64.bin -i console
```

or:

```
./modelerbatchlinux.bin -i console
```

4. Introduction details are displayed. Press Enter to continue.
5. Licensing information is displayed. Read the license, type 1 to accept it, and press Enter to continue.
6. You are prompted to type the installation location. To use the default directory (for example: /usr/IBM/SPSS/ModelerServer/<nn> or: /usr/IBM/SPSS/ModelerBatch/<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.
7. You are prompted to confirm the installation location. When it is correct, type y and press Enter.
8. A pre-installation summary is displayed to confirm your entries so far. Press Enter to continue.
9. A message is displayed to say the installation routine is ready to run. Press Enter to continue.
10. A progress bar is displayed while the installation routine runs. When the installation is complete, press Enter to exit from the installer.

Note: If you get the following message when you run clemc command on a server where Modeler Batch is installed, see the [article](#) on the **IBM Support** page for further steps.

```
java.lang.reflect.InvocationTargetException
```

Configuring IBM SPSS Modeler to Work with IBM SPSS Statistics

To enable IBM SPSS Modeler to use the Statistics Transform, Statistics Model, and Statistics Output nodes, you must have a copy of IBM SPSS Statistics installed and licensed on the computer where the stream is run.

If running IBM SPSS Modeler in local (standalone) mode, the licensed copy of IBM SPSS Statistics must be on the local computer.

When you have finished installing this copy of SPSS Modeler Client, you will also need to configure it to work with IBM SPSS Statistics. From the main client menu, choose:

Tools > Options > Helper Applications

and on the IBM SPSS Statistics tab, specify the location of the local IBM SPSS Statistics installation you want to use. For more information, see the *Source, Process and Output Nodes* guide or the online help for Helper Applications.

In addition, if running in distributed mode against a remote IBM SPSS Modeler Server, you also need to run a utility at the IBM SPSS Modeler Server host to create the `statistics.ini` file, which indicates to IBM SPSS Statistics the installation path for IBM SPSS Modeler Server. To do this, from the command prompt, change to the IBM SPSS Modeler Server *bin* directory and, for Windows, run:

```
statisticsutility -location=<IBM SPSS Statistics_installation_path>/bin
```

Alternatively, for UNIX, run:

```
./statisticsutility -location=<IBM SPSS Statistics_installation_path>/bin
```

If you do not have a licensed copy of IBM SPSS Statistics on your local machine, you can still run the Statistics File node against a IBM SPSS Statistics server, but attempts to run other IBM SPSS Statistics nodes will display an error message.

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 IBM SPSS Statistics nodes in IBM SPSS Modeler Server, you must take the following steps on the UNIX server to enable the plugins.

1. Log in as the superuser.
2. Export environment variables as follows:
 - **Linux.** `export LD_LIBRARY_PATH=[plugin_install_directory]/lib:$LD_LIBRARY_PATH`

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. Refer to the *IBM SPSS Modeler Server and Performance Guide* for more information. You need to choose an authentication method that does not require that the daemon runs as root.

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.

1. Log in as *root*. Alternatively, you can log in as *non-root* if the non-root user is also the user who installed IBM SPSS Modeler Server.
2. Change to the IBM SPSS Modeler Server installation directory. The startup script must be run from this location.
3. Run the startup script. For example, at the UNIX prompt type:
`./modelersrv.sh start`

Checking the Server Status

1. At the UNIX prompt, type:
`/modelersrv.sh list`

2. 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 when they have been authorized. See the topic [“Connecting End Users”](#) on page 7 for more information.

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 that is 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 from the download site. If you have questions about creating or setting permissions for ODBC data sources, contact your database administrator.

Supported ODBC drivers

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

Where to install drivers

Note: ODBC drivers must be installed and configured on each computer where processing might 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 IBM SPSS Modeler in distributed mode against a remote IBM SPSS Modeler Server, the ODBC drivers need to be installed on the computer where IBM SPSS Modeler Server is installed. For IBM SPSS Modeler Server on UNIX systems, see also "Configuring ODBC drivers on UNIX systems" later in this section.
- If you need to access the same data sources from both IBM SPSS Modeler and IBM SPSS Modeler Server, the ODBC drivers must be installed on both computers.
- If you are running IBM SPSS Modeler over Terminal Services, the ODBC drivers need to be installed on the Terminal Services server on which you have IBM SPSS Modeler installed.

Configuring ODBC drivers on UNIX systems

By default, the DataDirect Driver Manager is not configured for IBM SPSS Modeler Server on UNIX systems. To configure UNIX to load the DataDirect Driver Manager, enter the following commands:

```
cd <modeler_server_install_directory>/bin
rm -f libspssodbc.so
```

Then run this command if you want to use the UTF8 driver wrapper:

```
ln -s libspssodbc_datadirect.so libspssodbc.so
```

Or run this command instead if you want to use the UTF16 driver wrapper:

```
ln -s libspssodbc_datadirect_utf16.so libspssodbc.so
```

Doing so removes the default link and creates a link to the DataDirect Driver Manager.

Note: The UTF16 driver wrapper is required to use SAP HANA or IBM Db2 CLI drivers for some databases. DashDB requires the IBM Db2 CLI driver.

To configure SPSS Modeler Server:

1. Configure the SPSS Modeler Server start up script `modelersrv.sh` to source the IBM SPSS Data Access Pack `odbc.sh` environment file by adding the following line to `modelersrv.sh`:

```
. /<pathtoSDAPinstall>/odbc.sh
```

Where `<pathtoSDAPinstall>` is the full path to your IBM SPSS Data Access Pack installation.

2. Restart SPSS Modeler Server.

In addition, for SAP HANA and IBM Db2 only, add the following parameter definition to the DSN in your `odbc.ini` file to avoid buffer overflows during connection:

```
DriverUnicodeType=1
```

Note: The `libspssodbc_datadirect_utf16.so` wrapper is also compatible with the other SPSS Modeler Server supported ODBC drivers.

Configuring Snowflake or Big Query databases

If you connect Snowflake or BigQuery using an SDAP driver, which works with either an Excel node or XML node that needs to start with the JVM instance, you might receive this error:

```
Internal Error. Failed to open Java VM.
```

To resolve this issue, edit the SDAP ODBC configuration for these databases so that Modeler and SDAP use the same JVM instance. The following are examples of how to configure the JVM instance for Snowflake.

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*.

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

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

Silent removal of an installation

Silent mode enables software to be uninstalled without any user interaction. To silently remove an installation in IBM SPSS Modeler Server:

1. Run the uninstaller by executing the following command:

```
./<installer_path>/Uninstall_IBM_SPSS_MODELER_SERVER/  
Uninstall_IBM_SPSS_MODELER_SERVER -i silent
```

Where *<installer_path>* is the path name to the IBM SPSS Modeler Server 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*).

