

*IBM SPSS Modeler Social Network
Analysis 16 Installation and
Configuration Guide*

IBM

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Chapter 1. Introduction to IBM SPSS Modeler Social Network Analysis

IBM SPSS Modeler Social Network Analysis overview

IBM® SPSS® Modeler Social Network Analysis transforms information about relationships into fields that characterize the social behavior of individuals and groups. Using data describing the relationships underlying social networks, IBM SPSS Modeler Social Network Analysis identifies social leaders who influence the behavior of others in the network. In addition, you can determine which people are most affected by other network participants. By combining these results with other measures, you can create comprehensive profiles of individuals on which to base your predictive models. Models that include this social information will perform better than models that do not.

For more information about social network analysis, see the IBM SPSS Modeler Social Network Analysis 162261647161 User Guide.

IBM SPSS Modeler Social Network Analysis architecture

IBM SPSS Modeler Social Network Analysis consists of the following three primary components:

- IBM SPSS Modeler Social Network Analysis nodes within the IBM SPSS Modeler environment
- IBM SPSS Modeler Server Social Network Analysis, which adds processing of the node specifications to IBM SPSS Modeler Server
- Optional IBM SPSS Modeler Social Network Analysis cluster nodes to distribute the social network processing over multiple machines

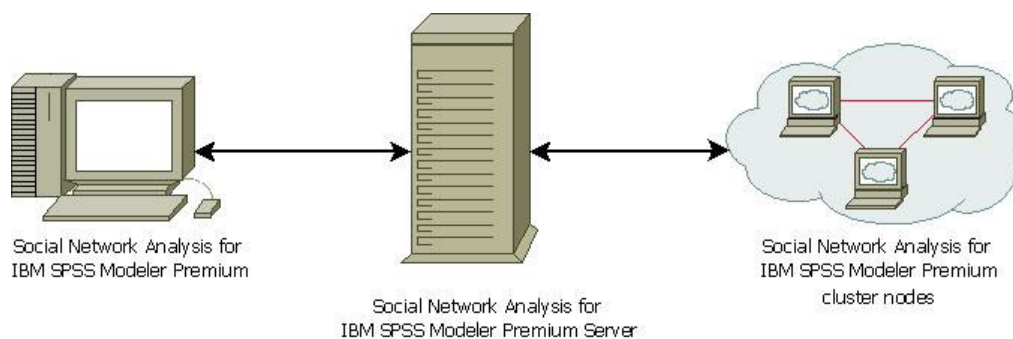


Figure 1. Product architecture

The typical workflow for using IBM SPSS Modeler Social Network Analysis includes the following steps:

1. Create an input text file containing the relationships underlying the social network in the required format.
2. In the IBM SPSS Modeler environment, add the desired IBM SPSS Modeler Social Network Analysis node to your stream. Define the settings for the node, which include a reference to the input text file. Add other nodes to the stream as needed.
3. Submit the stream to IBM SPSS Modeler Social Network Analysis for processing.
4. If your system includes IBM SPSS Modeler Social Network Analysis cluster nodes, IBM SPSS Modeler Server Social Network Analysis distributes the processing over the available cluster nodes.
5. When all processing completes, IBM SPSS Modeler Social Network Analysis returns the results.

Setting up your environment

IBM SPSS Modeler Social Network Analysis setup involves the following steps:

1. Install IBM SPSS Modeler Social Network Analysis on all clients that will be working with streams containing social network analysis nodes. See the topic “IBM SPSS Modeler Social Network Analysis installation” on page 3 for more information.
2. Install IBM SPSS Modeler Server Social Network Analysis on the server used for processing streams social network analysis nodes. See the topic “IBM SPSS Modeler Server Social Network Analysis installation” on page 5 for more information.
3. Optionally, install IBM SPSS Modeler Social Network Analysis cluster nodes on machines used for distributed processing. See the topic “Cluster node installation” on page 7 for more information.
4. Use the administration tool to configure your server. See the topic Chapter 5, “Administration tool,” on page 9 for more information.

When you install IBM SPSS Modeler Social Network Analysis you also install two demonstration streams that can be opened in IBM SPSS Modeler. These streams give examples of how IBM SPSS Modeler Social Network Analysis can be used; one uses diffusion analysis to identify the top 300 customers who may leave (also known as "churn"), and the other uses group analysis to identify those groups of customers who are most likely to churn.

System requirements

IBM SPSS Modeler Social Network Analysis must be installed on a system with IBM SPSS Modeler; consequently, the requirements for IBM SPSS Modeler Social Network Analysis are identical to those for IBM SPSS Modeler. Refer to the IBM SPSS Modeler installation guides for details of the minimum hardware and software requirements for IBM SPSS Modeler Social Network Analysis.

Memory requirement estimation

If you have an estimate of the size of input data you will run through IBM SPSS Modeler Social Network Analysis, you can calculate the approximate amount of free RAM you will require to run the process successfully.

- For Diffusion Analysis, the calculation is:
$$\text{Mem_size (KB) on Server} = 0.1 * \text{Record_Num}$$

where *Mem_size (KB)* is the approximate amount of free memory required on the server, and *Record_Num* is the number of rows in the source data.

- For Group Analysis, the calculation is:
$$\text{Mem_size (KB)} = 10 * \text{Cust_Num}$$

where *Cust_Num* is the number of customers in the data.

Chapter 2. IBM SPSS Modeler Social Network Analysis

IBM SPSS Modeler Social Network Analysis installation

IBM SPSS Modeler Social Network Analysis adds nodes that allow the inclusion of social analytic techniques in streams to the IBM SPSS Modeler environment. IBM SPSS Modeler Social Network Analysis should be installed on every system from which you will access and work with these nodes.

Installing IBM SPSS Modeler Social Network Analysis

Your administrator might have given you an installation disk or identified a network location from which to install. Check with your administrator if you do not know how you are supposed to install IBM SPSS Modeler Social Network Analysis.

Note: To install IBM SPSS Modeler Social Network Analysis, you must be logged on to your computer with administrator privileges.

Note: IBM SPSS Modeler Social Network Analysis must be installed to the IBM SPSS Modeler installation location. If IBM SPSS Modeler is not installed, the IBM SPSS Modeler Social Network Analysis installation will fail.

After you install IBM SPSS Modeler Social Network Analysis you must restart IBM SPSS Modeler.

Installing from a Downloaded File

You must run the installer as administrator:

1. Double-click the file that you downloaded and extract all the files to some location on your computer.
2. Using Windows Explorer, browse to the location where you extracted the files.
3. Right-click *sna_client_installer.exe* and choose **Run as Administrator**.
4. Follow the instructions that appear on the screen.

Installing from the DVD

You must run the autoplay as administrator:

1. Close the autoplay window that automatically appeared when you inserted the DVD into your DVD drive.
2. Using Windows Explorer, browse to the DVD drive.
3. Right-click *sna_client_installer.exe* at the root of the DVD and choose **Run as Administrator**.
4. On the autoplay menu, click Install IBM SPSS Modeler Social Network Analysis.
5. Follow the instructions that appear on the screen.

Invoking the Setup Program Manually

You can also invoke the Setup program manually:

1. From the Windows Start menu, choose **Run**.
2. In the Run dialog box, type `D:\sna_client_installer`. (If you are not using *D* as the DVD drive, enter the appropriate drive location.)
3. Follow the instructions that appear on the screen.

Installing from a Network Location

1. Using Windows Explorer, browse to the location that your administrator provided for the *sna_client_installer.exe* file.
2. If your computer is running Windows Vista or 7, right-click *sna_client_installer.exe* and choose **Run as Administrator**. Otherwise, double-click the file.
3. On the autoplay menu, click Install IBM SPSS Modeler Social Network Analysis.
4. Follow the instructions that appear on the screen.

Removing IBM SPSS Modeler Social Network Analysis

To uninstall IBM SPSS Modeler Social Network Analysis, perform the following steps:

1. From the Windows Start menu choose:
Settings > Control Panel
2. From the Control Panel, choose **Add or Remove Programs**.
3. Click **Change or Remove Programs**.
4. Select IBM SPSS Modeler Social Network Analysis from the list of currently installed programs, and click **Change/Remove**. If you have more than one version installed on the computer, be sure to select the version that you want to remove.

A message will be displayed when the uninstallation process completes.

Chapter 3. IBM SPSS Modeler Server Social Network Analysis

IBM SPSS Modeler Server Social Network Analysis installation

IBM SPSS Modeler Server Social Network Analysis adds the ability to perform social network analysis to the IBM SPSS Modeler Server environment. IBM SPSS Modeler Server Social Network Analysis efficiently processes massive amounts of network data, which may include millions of individuals and relationships, into a relatively small number of fields for further analyses. IBM SPSS Modeler Server Social Network Analysis can handle all of the analytical processing itself, or it can function in a clustered environment with nodes sharing the computational load.

Installing on Windows systems

Note: IBM SPSS Modeler Server Social Network Analysis must be installed to the IBM SPSS Modeler Server installation location. If IBM SPSS Modeler Server is not installed, the IBM SPSS Modeler Server Social Network Analysis installation will fail.

Windows Server

Note: You must run the autoplay or, if using downloaded files, *sna_server_installer.exe* as administrator:

To install IBM SPSS Modeler Server Social Network Analysis on Windows Server, perform the following steps:

1. If you downloaded the product, double-click the downloaded file and extract the installation files.
2. If installing from a DVD, close the autoplay window that automatically appeared when you inserted the DVD into your DVD drive.
3. Using Windows Explorer, browse to the DVD drive. Alternatively, browse to the location where the installation files were extracted.
4. Right-click *sna_server_installer.exe* in the *Windows* subfolder and choose **Run as Administrator**. Alternatively, go to the location where the installation files were extracted and click on *sna_server_installer.exe*.
5. On the autoplay menu, choose Install IBM SPSS Modeler Server Social Network Analysis, and then follow the instructions that appear on the screen.

Installing on UNIX systems

Note: IBM SPSS Modeler Server Social Network Analysis must be installed to the IBM SPSS Modeler Server installation location. If IBM SPSS Modeler Server is not installed, the IBM SPSS Modeler Server Social Network Analysis installation will fail. To install IBM SPSS Modeler Server Social Network Analysis, perform the following steps:

1. Log in as *root*.
2. If installing from a DVD insert the product DVD into the DVD drive and ensure that you can access the drive. On Solaris, the volume manager (the **vold** daemon) must be running.
3. If using downloaded installation media, which is a compressed archive, extract the files in the archive.
4. If installing from a DVD, change directories to the DVD drive mount point.
5. If installing from a download, change to the directory where the installer file was extracted.
6. Run the install script corresponding to your UNIX environment. See the table below for a list of the install script names. Make sure the install script can be executed by *root*. Use the `-i console` option to execute the script in console mode. For example, for AIX, run the script as follows:

```
sna_server_installer_aix64.bin -i console
```

Table 1. Install scripts.

UNIX environment	Install script
AIX	.\AIX64\sna_server_installer_aix64.bin
Linux (64-bit)	.\Linux64\sna_server_installer_linux64.bin
Linux on IBM System z	.\ZLinux64\sna_server_installer_zlinux64.bin
Solaris	.\SunOS64\sna_server_installer_sunos64.bin

7. Follow the displayed instructions. When prompted for an installation directory, use the IBM SPSS Modeler Server installation directory. If you specify a different directory, IBM SPSS Modeler Server Social Network Analysis will not work.

Removing from Windows systems

To uninstall IBM SPSS Modeler Server Social Network Analysis, perform the following steps:

1. From the Windows Start menu choose:
Settings > Control Panel
2. From the Control Panel, choose **Add or Remove Programs**.
3. Click **Change or Remove Programs**.
4. Select IBM SPSS Modeler Server Social Network Analysis from the list of currently installed programs, and click **Change/Remove**. If you have more than one version installed on the computer, be sure to select the version that you want to remove.

A message will be displayed when the uninstallation process completes.

Removing from UNIX systems

To uninstall IBM SPSS Modeler Server Social Network Analysis, remove the following program files:

- *\$installLoc/ext/bin/pasw.sna*
- *\$installLoc/ext/lib/pasw.sna*
- *\$installLoc/MPICH2*
- *\$installLoc/TABI*
- */usr/bin/pmlxec*
- */usr/bin/tabi-loader*

The value of *\$installLoc* corresponds to the IBM SPSS Modeler Server installation path.

Chapter 4. Cluster nodes

Cluster node installation

IBM SPSS Modeler Social Network Analysis cluster nodes allow social network processing to be distributed over multiple systems, reducing the processing load on any one machine. The cluster node installation needs to be performed on every system that will participate in the cluster environment.

Installing on Windows systems

You can install cluster nodes to any destination folder, but you must install the cluster node on the computer from which the setup is being run. You cannot install to a network location.

Windows Server

Note: You must run the autoplay or, if using downloaded files, *sna_worker_installer.exe* as administrator:

To install a cluster node on Windows Server, perform the following steps:

1. If you downloaded the product, double-click the downloaded file and extract the installation files.
2. If installing from a DVD, close the autoplay window that automatically appeared when you inserted the DVD into your DVD drive.
3. Using Windows Explorer, browse to the DVD drive. Alternatively, browse to the location where the installation files were extracted.
4. Right-click *sna_worker_installer.exe* in the *Windows* subfolder and choose **Run as Administrator**. Alternatively, go to the location where the installation files were extracted and click on *sna_worker_installer.exe*.
5. Choose Install IBM SPSS Modeler Social Network Analysis (Cluster node).
6. Follow the instructions that appear on the screen.

Installing on UNIX systems

To install a cluster node, perform the following steps:

1. Log in as *root*.
2. If installing from a DVD insert the product DVD into the DVD drive and ensure that you can access the drive. On Solaris, the volume manager (the **vold** daemon) must be running.
3. If using downloaded installation media, which is a compressed archive, extract the files in the archive.
4. If installing from a DVD, change directories to the DVD drive mount point. change to the directory where the installer file was copied or extracted
5. If installing from a download, change to the directory where the installer file was extracted.
6. Run the install script corresponding to your UNIX environment. See the table for a list of the install script names. Make sure the install script can be executed by *root*. Use the **-i** console option to execute the script in console mode. For example, for AIX, run the script as follows:

```
sna_server_worker_aix64.bin -i console
```

Table 2. Install scripts.

UNIX environment	Install script
AIX	.\AIX64\sna_worker_installer_aix64.bin
Linux (64-bit)	.\Lintel64\sna_worker_installer_linux64.bin
Linux on IBM System z	.\ZLinux64\sna_worker_installer_zlinux64.bin

Table 2. Install scripts (continued).

UNIX environment	Install script
Solaris	.\SunOS64\sna_worker_installer_sunos64.bin

7. Follow the displayed instructions.

Removing from Windows systems

To uninstall a cluster node for IBM SPSS Modeler Server Social Network Analysis, perform the following steps:

1. From the Windows Start menu choose:
Settings > Control Panel
2. From the Control Panel, choose **Add or Remove Programs**.
3. Click **Change or Remove Programs**.
4. Select IBM SPSS Modeler Social Network Analysis cluster node from the list of currently installed programs, and click **Change/Remove**. If you have more than one version installed on the computer, be sure to select the version that you want to remove.

A message will be displayed when the uninstallation process completes.

Removing from UNIX systems

To uninstall a cluster node for IBM SPSS Modeler Social Network Analysis, remove the following program files:

- *\$installLoc/MPICH2*
- *\$installLoc/TABI*

The value of *\$installLoc* corresponds to the IBM SPSS Modeler Social Network Analysis cluster node installation path.

Chapter 5. Administration tool

After installing IBM SPSS Modeler Server Social Network Analysis, you must configure your environment. The installation includes an administration tool for specifying the necessary configuration settings.

Starting the administration tool

You can execute the administration tool automatically when the IBM SPSS Modeler Server Social Network Analysis installation completes. You can also execute the tool manually at any time to update configuration settings.

To run the administration tool manually, execute the administration tool file for the server from the installation location. The IBM SPSS Modeler Server Social Network Analysis administration tool is available from `<installLoc>\TABI\adminTool_server`, where `<installLoc>` corresponds to the installation location of IBM SPSS Modeler Server Social Network Analysis; this is normally the IBM SPSS Modeler Server installation location.

Specifying configuration settings

The administration tool consists of a series of prompts for configuration settings when you administer the IBM SPSS Modeler Server Social Network Analysis.

- **MPD hosts.** Enter the name or IP address of each cluster node. Host information is saved in `$HOME/mpd.hosts`.
- **Working directory.** Specify a public directory that all cluster nodes can access by using the same path.
- **Temporary directory.** Define a temporary directory used for interim and internal processing files.
- **Number of processes.** Specify the number of hosts in the cluster.

Note: If you changed the *Working* directory, *Temporary* directory, or *Number of processes*, perform the following steps:

1. If on a UNIX system, run the shell command: `source $HOME/SNA.profile`.
2. Restart IBM SPSS Modeler, or IBM SPSS Modeler Server, as applicable.

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