
Contents

Administrator's guide	1
Before you start	1
Ghosting.	1
Citrix and Terminal Services	1
Mixed licensing	1
Installing the concurrent license manager	2
Upgrading the license manager	3
Installing the license manager on Windows	3
Installing the license manager on Mac OS	4
Installing the license manager on non-Windows systems	4
Installing the license manager administrator	4
Licensing your product.	4
Installing a license in a virtual environment	5
Installing a license from the command prompt	6
Adding a license	8
Viewing your license	8
Testing the license manager	8

Installing the product on the local desktop computers	8
Pushing an installation to Windows computers	9
Running a silent installation on Mac and Linux computers	12
Administering the concurrent license	13
Starting the WlmAdmin Application	13
Adding a server	13
Obtaining log information	13
Viewing details about a license	13
Setting up redundant license servers	14
Configuring commuter licenses.	15
Configuring license reservations	16
Starting and stopping the license manager	17
Uninstalling the license manager	18
Uninstalling the license manager administrator	18
Troubleshooting Desktop Computers	19
Service and Support	19

Important: If a firewall is running on the computer on which the license manager is installed, you must open port 5093 for UDP. Otherwise, client computers will not be able to retrieve a license from the license manager. Furthermore, if you are using redundant license manager machines, you must open port 5099 for UDP to enable the license manager machines to communicate with each other.

Upgrading the license manager

If you have a previous version of the license manager installed, you must perform the following steps:

Important: IBM SPSS Statistics requires Sentinel RMS License Manager 9.1 or greater (prior versions are not supported).

1. Go to the directory in which you installed the old license manager.
2. Copy the *lserverc* file. On Windows, look in the *winnt* subdirectory.
3. Save the *lserverc* file to a safe location.
4. If any users have checked out commuter licenses, make sure those users check the licenses back in. See the topic “Configuring commuter licenses” on page 15 for information about obtaining a list of checked out licenses.
5. Shutdown the license manager. See the topic “Starting and stopping the license manager” on page 17 for more information.
6. Uninstall the old license manager. See the topic “Uninstalling the license manager” on page 18 for more information.
7. Install the new license manager. For information about installing on Windows, see the topic “Installing the license manager on Windows”. For information about installing on UNIX/Linux, see the topic “Installing the license manager on non-Windows systems” on page 4. For information about installing on Mac OS, see the topic “Installing the license manager on Mac OS” on page 4.
8. Copy the saved *lserverc* file to the directory in which you installed the new license manager or the *winnt* subdirectory of the installation directory on Windows. If you accepted the default location on Windows, check the C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\WinNT folder.

Installing the license manager on Windows

Note: You must launch the installer as administrator. When instructed to launch an installer file, right-click the file and choose **Run As Administrator**.

Note: Ensure that the machine on which you are installing has Java installed.

1. Insert the concurrent licensing tools DVD/CD into the DVD/CD drive of the network computer on which you want to run the license manager. Copy the archive that contains the license manager and tools for your Windows operating system from the DVD/CD.

-or-

If you downloaded an eImage file, use an archive utility such as WinZip to extract all the files in the appropriate eImage.

2. Extract the contents of the archive that contains the license manager and tools.
3. Run *setup.exe* from the extracted manager directory and follow the instructions that appear on the screen.
4. To install the license manager administrator on the same machine as the license manager, run *setup.exe* from the extracted *tools* directory and follow the instructions that appear on the screen. You also have the option of installing the license manager administrator on another Windows machine if you want to administer the license manager remotely.

Installing the license manager on Mac OS

1. Insert the concurrent licensing tools DVD/CD into the DVD/CD drive of the network computer on which you want to run the license manager. Look for the archive that contains the license manager and tools for your operating system.
-or-
If you downloaded an eImage file, go to the location where you downloaded the file.
2. Extract the contents of the archive that contains the license manager and tools to the location where you want to install the license manager.
3. Install the license manager administrator on a Windows machine. See the topic “Installing the license manager administrator” for more information.
4. Refer to “Starting and stopping the license manager” on page 17 for information about starting the license manager.

Installing the license manager on non-Windows systems

1. Insert the concurrent licensing tools DVD/CD into the DVD/CD drive of the network computer on which you want to run the license manager. Look for the archive that contains the license manager and tools for your operating system.
-or-
If you downloaded an eImage file, go to the location where you downloaded the file.
2. Extract the contents of the archive that contains the license manager and tools to the location where you want to install the license manager.
3. Install the license manager administrator on a Windows machine. See the topic “Installing the license manager administrator” for more information.
4. Refer to “Starting and stopping the license manager” on page 17 for information about starting the license manager.

Installing the license manager administrator

The Windows-only license manager administrator is used to administer the license manager. If you installed the license manager on a non-Windows machine, you must install the license manager administrator on a Windows machine.

1. Insert the concurrent licensing tools DVD/CD into the DVD/CD drive of the Windows network computer on which you want to run the license manager administrator. Copy the archive that contains the license manager and tools from the DVD/CD.
-or-
If you downloaded an eImage file, use an archive utility such as WinZip to extract all the files in the appropriate eImage.
2. Extract the contents of the archive that contains the license manager and tools.
3. Run setup.exe from the extracted tools directory and follow the instructions that appear on the screen.

Licensing your product

On non-Windows operating systems, you must install the license from the command prompt after installing the license manager.

Note: Licenses are tied to the network computer's physical or virtual hardware with a **lock code**. If you replace the network computer or its hardware, you will have a new lock code and will need to contact your sales representative to obtain a new authorization code. If you are installing on a virtual machine, you need to ensure that you select a lock code that does not change on restart. For more information, see “Installing a license in a virtual environment” on page 5.

Important: The license is sensitive to time changes. If you must change the system time and then cannot run the product, contact the Client Care team for assistance by visiting <http://www.ibm.com/software/analytics/spss/support/clientcare.html>.

Installing a license in a virtual environment

If you installed the concurrent license manager in a virtual environment, there are special instructions for licensing. On a virtual machine the hardware is virtual, and the locking code that ties the license manager to the license might change when the virtual machine is restarted. To ensure the license manager works correctly, you need to find a locking code that does not change when the virtual machine is restarted. When you find a stable locking code, you will use it to license the license manager.

Important:

If you choose a locking code that does change on reboot, the license manager will stop working. The IBM SPSS application will not be able to retrieve a license and will fail to start.

Checking the locking code

1. Open a command prompt.
2. Change to the following directory.
 - **Windows.** The license manager administrator installation directory. If you accepted the default location during installation, the license manager administrator installation directory is C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\WinNT.
 - **Other platforms.** The license manager installation directory.
3. At the command prompt, type `echoid (Windows)` or `./echoid (other platforms)`.

You will see something like the following in the output:

```
Locking Code 1 : 4-12A1B
```

The number that appears immediately before the hyphen (-) is the locking code criteria. The locking code criteria is a number that represents the virtual hardware that is used for the locking code (in this example, it is 4, which represents the OS volume serial ID). The number after the hyphen is the locking code itself (in this example, it is 12A1B).

Following are the possible locking code criteria.

Locking code criteria	Virtual hardware
2	IP address
4	OS volume serial ID
8	Hostname
10	Ethernet card

Confirming that the locking code is stable

1. After checking the locking code, restart the virtual machine.
2. Check the locking code again (see “Checking the locking code”).
 - If the locking code **doesn’t change**, reboot and check a few more times. If the locking code is stable, you are ready to license (see “Licensing the license manager with the new locking code” on page 6).
 - If the locking code **does change**, you need to update the locking code (see “Updating the locking code” on page 6).

Updating the locking code

1. In a text editor, open `echoid.dat`, which you can find in the following directory.
 - **Windows.** The license manager administrator installation directory. If you accepted the default location during installation, the license manager administrator installation directory is `C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\WinNT`.
 - **Other platforms.** The license manager installation directory.
2. You will see a single hexadecimal number that represents the current locking code criteria. Change this number to one of the acceptable locking code criteria in hexadecimal format.

Locking code criteria in hexadecimal format	Virtual hardware
0x002	IP address
0x004	OS volume serial ID
0x008	Hostname
0x010	Ethernet card

Licensing the license manager with the new locking code

After you find and update to a stable locking code, there are no further licensing steps that are particular to virtual environments. Use the command prompt to complete installation of the license.

Installing a license from the command prompt

You have two options for installing from the command prompt. You can use *licenseactivator* to get a license from the Internet automatically, or you can use *echoid* to get a license manually.

Using *licenseactivator* to install a license automatically

The computer on which you are installing the license must be connected to the Internet. If it isn't, install the license manually. See the topic "Installing a license manually" on page 7 for more information.

1. Log in as the user who installed the license manager.
2. Open a command prompt and change directories to the license manager administrator installation directory. This is the directory in which you installed the *license manager administrator*, not the directory in which you installed IBM SPSS Statistics. If you accepted the default location on Windows, check the `C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\WinNT` folder.
3. You typically have an authorization code. In the simplest case, you enter the following at the command prompt/terminal window. See below for more details about the command prompt usage.

Windows: `licenseactivator <auth-code>`

UNIX/Linux/MacOS: `./licenseactivator <auth-code>`

where `<auth-code>` is your authorization code.

You should see a message that the license was added successfully. If it wasn't, note the error code and try installing the license manually. See the topic "Installing a license manually" on page 7 for more information.

When you use *licenseactivator*, it licenses the product and writes a log file to its directory. The name of the log file is `licenseactivator_<month>_<day>_<year>.log`. If any errors occur, you can check the log file for more information. This information is also useful if you contact IBM Corp. for support.

Using `licenseactivator` with Authorization Codes

`licenseactivator` is typically used with one or more authorization codes that you received when you purchased the product. Enter all of the text on one line.

Windows:

```
licenseactivator authcode1[:authcode2:...:authcodeN] [PROXYHOST=proxy-hostname] [PROXYPORT=proxy-port-number]
[PROXYUSER=proxy-userid] [PROXYPASS=proxy-password]
```

UNIX/Linux/MacOS:

```
./licenseactivator authcode1[:authcode2:...:authcodeN] [PROXYHOST=proxy-hostname] [PROXYPORT=proxy-port-number]
[PROXYUSER=proxy-userid] [PROXYPASS=proxy-password]
```

- Multiple authorization codes are separated by colons (:).
- The proxy settings are optional, but you may need them if your computer is behind a proxy. Which proxy settings are needed depend on your specific proxy configuration. You might need all of them.

PROXYHOST

The server name or IP address of the proxy host

PROXYPORT

The port number for connecting to the Internet through the proxy

PROXYUSER

If required, the user ID for the proxy

PROXYPASS

If required, the password associated with the user ID

Using `licenseactivator` with License Codes

In less common scenarios, IBM Corp. may have sent you a *license*.

Windows:

```
licenseactivator licensecode[:licensecode2:...:licensecodeN]
```

UNIX/Linux/MacOS:

```
./licenseactivator licensecode[:licensecode2:...:licensecodeN]
```

- Multiple license codes are separated by colons (:).
- When using license codes, `licenseactivator` does not connect to the Internet, so you do not need to specify proxy information.

Installing a license manually

1. Log in as the user who installed the license manager.
2. Open a command prompt and change directories to the license manager administrator installation directory. Note that this is the directory in which you installed the *license manager administrator*, not the directory in which you installed IBM SPSS Statistics. If you accepted the default location on Windows, check the C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\WinNT folder.
3. Get the lock code for the server machine. At the command prompt, type `echoid` (Windows) or `./echoid` (other platforms).
4. Send the lock code and your authorization code to IBM Corp. by calling your local office or sending an e-mail message to spsscs@us.ibm.com. IBM Corp. will then provide a license code or a file containing a license code.
5. Use `licenseactivator` to enter the license code or codes.

Administering the concurrent license

The license manager maintains your concurrent license. To administer the license manager itself and to view information about the concurrent licenses that it is maintaining, you can use the WlmAdmin application, which is the main user interface for the license manager administrator. If you are administering a license manager on a non-Windows machine or a remote Windows machine, install the license manager administrator on a separate Windows machine. See the topic "Installing the license manager administrator" on page 4 for more information.

Note: If you need additional administration information, refer to the SafeNet documentation, which is installed with the license manager administrator. This documentation is in the *help\Content* directory in the license manager administration installation directory (for example, C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\help\Content).

Starting the WlmAdmin Application

From the Windows Start menu, choose:

[All] Programs > IBM > SPSS License Tools > <version> > Sentinel RMS Server Administration

Adding a server

Before you can administer a license manager, you need to add its server to the WlmAdmin application. You have two options for adding the server.

To manually add a server

1. From the WlmAdmin application menus, choose:
 Edit > Defined Server List
2. In the Defined Server List dialog, enter the name or IP address of the server on which the license manager is running.
3. Click **Add**.
4. Click **OK**.

The server now appears in the Defined Servers lists in the left pane of the WlmAdmin application.

To view a list of servers on the subnet

1. In the left pane of the WlmAdmin application, click the + sign next to **Subnet Servers**.

A list of license manager servers on your subnet appears. If you can't find a specific server with this method, manually add it as described above.

Obtaining log information

If end users have difficulty checking out licenses, the log files may contain useful information. You can use the LSERVOPTS environment variable and the `-f <trace-log-file>` and `-l <usage-log-file>` options to specify that log files should be created. For more information about this environment variable and its options, refer to the SafeNet documentation in the *Content* directory in the license manager administrator installation directory.

Viewing details about a license

You can view details about licenses that you added either manually or through the License Authorization Wizard.

1. In the left pane of the WlmAdmin application, click the + sign next to the license manager server to see the license(s).

5. Change the order of the servers to indicate the order in which the redundant license servers are used. The first one in the list is the primary server.
6. Click **Add License** to add the license(s) that you received from Customer Service or your local office. If you received multiple licenses, be sure to add every one.
7. Click **OK**.
8. Click **Done** when you are finished.

To save the redundant license file

1. From the WrlfTool application menus, choose:
File > Save As
2. Save the redundant license file (*lserverlf*) to an easily accessible location. You will need to copy the file in the next steps.

To configure the redundant license servers

1. Copy the redundant license file (*lserverlf*) to the *winnt* subfolder of the license manager installation directory on Windows. If you accepted the default location, check the C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager folder. On other operating systems, copy the file directly to the license manager installation directory. There must be at least three redundant license servers.
2. Start the license manager on each redundant license server.

To configure end-user computers

When the end user installs the product, the user specifies all redundant servers, with the server names or IP addresses separated by a tilde (for example, *server1~server2~server3*). The setup program then adds the necessary configuration information to the end user's computer. If the product is already installed on the desktop computers, you can perform the following manual steps to add the configuration information. You can also push an uninstall followed by a new install that defines all the servers. Refer to "Pushing an installation to Windows computers" on page 9 for information about pushing installations.

1. Using a text editor, open *spssprod.inf*. On Windows, this file is located in the product installation directory on the desktop computer. On Mac OS, this file is in the app bundle, in *Contents/bin*. On Linux, this file is in the *bin* subdirectory of the product installation directory.
2. Change the value of DAEMONHOST to the server names or IP addresses separated by a tilde (~). For example:

```
DAEMONHOST=server1~server2~server3
```
3. Save *spssprod.inf*.

Configuring commuter licenses

Commuter licenses allow your end users to check out licenses from the license manager, so that they can use the license when not connected to the network. On Windows, commuter licenses are *not* enabled by default. They are enabled by default on other operating systems. Instructions for actually checking out the commuter license appear in the end user installation instructions.

You can restrict the percentage of licenses that are enabled for commuting on the license manager server. It's a good idea to restrict commuter licenses to prevent all the licenses (tokens) from being used up by commuters. After the specified percentage of licenses have been used by commuters, no more will be available until the commuter licenses expire or are checked back in. You can also configure the maximum duration for which an end user can check out a license. The default maximum duration is seven days.

Important: If you are using redundant license servers with commuter licenses, only the primary license server allows users to check out and check in commuter licenses. If the primary license server is down, end users will not be able to check out and check in licenses.

To create a new reservation file

1. From the WlmAdmin application menus, choose:
Edit > Reservation File
This action opens the Wlsgmrg application.
2. From the Wlsgmrg application menus, choose **File > New**.

To add licenses and users to the reservation file

1. From the Wlsgmrg application menus, choose:
Feature > Add
2. Click **Next** on the first screen of the wizard.
3. Specify the feature code associated with the license that you want to reserve. Refer to “Viewing details about a license” on page 13 for information about getting the feature codes associated with licenses. Also define a specific version, which is entered as it appears in the WlmAdmin application (for example, 160). The version is not optional. Ignore the Capacity controls, because capacity licenses are not supported.
4. Click **Next**.
5. Specify a name for a group of users. The name is arbitrary, but you should make it descriptive (for example, Sales).
6. Specify the number of licenses that are reserved for the group. Group members can still access all licenses, but the number of licenses you specify will no longer be available for users who are not included in the group. That is, if you have 10 licenses and you reserve five, members of the group have 10 licenses available to them, while other users have only five.
7. On the Members window, click **Add** to specify a user or computer name associated with the group (do not use IP addresses). If the user or machine is included in the group, that user or machine can use the reserved license. If the user or machine is excluded from the group, that user or machine cannot access the license at all. Specify as many users or machines as needed. Note that groups must be mutually exclusive. Therefore, different groups for the same license cannot contain common users or computers.
8. Click **Finish** when all users have been added to the group.
9. Add other groups or licenses as needed. You can also modify or delete licenses and groups by right-clicking one and choosing **Properties**.

To save the reservation file

1. When finished defining the reservation file, from the menus choose:
File > Save As
2. Save the file to an easily accessible location. You will need to copy the file in the next step.
3. To enable the license server to automatically find the *lsreserv* file at start up, copy the file to the *winnnt* subfolder of the license manager installation directory on Windows. If you accepted the default location, check the C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel RMS License Manager folder. On other operating systems, copy the file directly to the license manager installation directory.
4. If you want the same reservations to apply for all redundant servers, copy the reservation file (*lsreserv*) to each server.
5. Restart each license manager when finished.

Starting and stopping the license manager

The method for starting the license manager depends on your operating system.

Windows

On Windows machines, the license manager is a System Service. The service is automatically started by default. However, if you need to start it manually:

1. In the Windows Control Panel, double-click **Administrative Tools**.
2. Double-click **Services**.
3. Locate **Sentinel RMS License Manager** in the Services list.
4. Right-click the service and choose **Start** or **Stop**.

Other operating systems

On other operating systems, the license manager is a daemon service. Complete the following steps to start it manually. You can also configure the license manager to start automatically (instructions follow).

1. Using the command prompt, browse to the directory in which you installed the license manager.
2. **Starting.** As root, type `./lsv &` at the command prompt and press Enter.
3. **Stopping.** As root, type `./lsvdown <hostname>` at the command prompt, where *<hostname>* is the network name of the computer on which the license manager is running. Then press Enter.

Configuring the license manager to start automatically

Windows

1. In the Windows Control Panel, double-click **Administrative Tools**.
2. Double-click **Services**.
3. Locate **Sentinel RMS License Manager** in the Services list.
4. Right-click the service and choose **Properties**.
5. Set the Startup type to **Automatic**.
6. Click **OK**.

Other operating systems

1. Add `./lsv &` to one of the operating system startup files.

Uninstalling the license manager

Windows

1. From the Windows Start menu, choose:
Settings > Control Panel
2. Double-click **Add/Remove Programs**.
3. Select **Sentinel RMS License Manager** and then click **Remove**.
4. Click **Yes** when prompted to remove the license manager.

Other operating systems

1. Using the command prompt, browse to the directory to which you installed the license manager.
2. As root, stop the license manager by typing `./lsvdown <hostname>` at the command prompt, where *<hostname>* is the network name of the computer on which the license manager is running. Then press Enter.
3. Remove the directory where the license manager is installed.

Uninstalling the license manager administrator

1. From the Windows Start menu, choose:
Settings > Control Panel
2. Double-click **Add/Remove Programs**.

3. Select **License Tools** and then click **Remove**.
4. Click **Yes** when prompted to remove the concurrent licensing tools.

Troubleshooting Desktop Computers

If the end users' desktop computers are having trouble finding the license manager:

1. Run `lswhere` to verify that the desktop computer can find the network computer on which the license manager is running. See the topic "Running `lswhere`" for more information.
2. Make sure the license manager service is running on the network computer.
3. Check the appropriate `spssprod.inf` file. On Windows, this file is located in the product installation directory on the desktop computer. On Mac OS, this file is in the app bundle, in `Contents/bin`. On Linux, this file is in the `bin` subdirectory of the product installation directory. Open `spssprod.inf` and make sure `DAEMONHOST` is set to the correct name or IP address of the computer on which the license manager is running. If you are using redundant servers, this should define all of them. Each name is separated by a tilde (~) character. For example, if the license manager computers are `SERVER1`, `SERVER2`, and `SERVER3`, `DAEMONHOST` is set to `SERVER1~SERVER2~SERVER3`.

Running `lswhere`

You can run `lswhere` from an end user's desktop computer to check which computer is running the concurrent license manager.

1. Using a command prompt, change the current directory to one of the following:
 - **Windows.** `<installation directory>`
 - **Mac OS.** `<installation directory>/<product>.app/Contents/bin`
 - **Linux.** `<installation directory>/bin`
2. Type `lswhere` (Windows) or `./lswhere` (Linux and Mac).

Service and Support

To contact IBM Corp. Technical Support, visit <http://www.ibm.com/support> and submit a case. You will need to register with IBM Corp. Technical Support if you haven't done so previously.

IBM Corp. provides public training seminars for IBM Corp. products on a regular basis. You can also arrange to have training presented onsite. For information on training seminars, visit <http://www.ibm.com/training/spss>.



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