SILVACO

Software Installation Guide
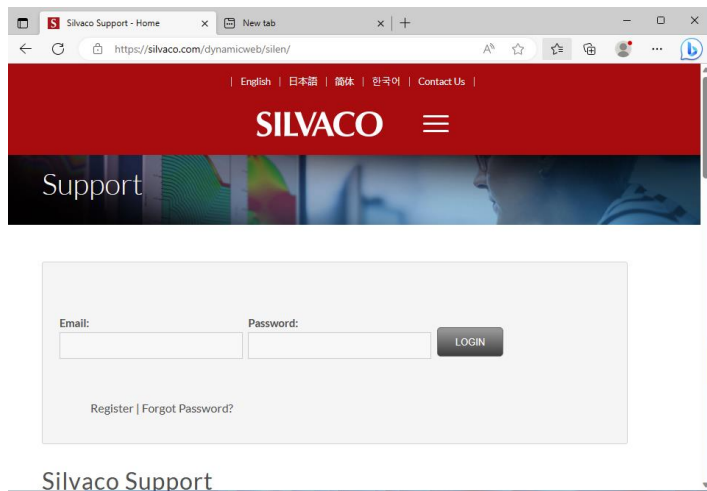
2025.04

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Registering your Online Silvaco Account

1. Go to Support > Download or click here.

2. Click Register.
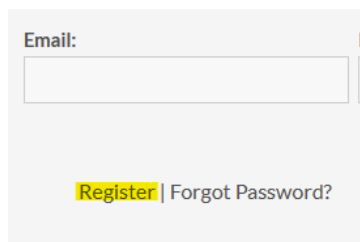
3. Complete the form using your company or institution contact information and email address.

The accuracy of this information ensures you have full and up to date access to Silvaco products as well as useful technical information.

4. Once registration is approved, a temporary password will be issued. You may then change this password. Save your login information as you will need it for future software updates.

Requesting Software Download Access

All Silvaco software is delivered by direct download from the Silvaco website.

1. Go to Support > Download or click here.
2. Login with your Silvaco account credentials.
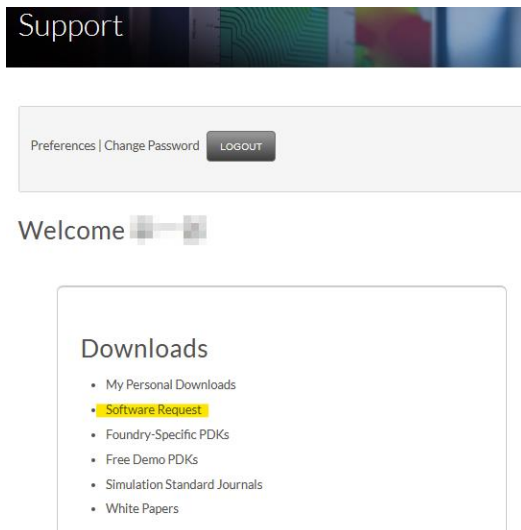
3. Go to Downloads > Software Request.
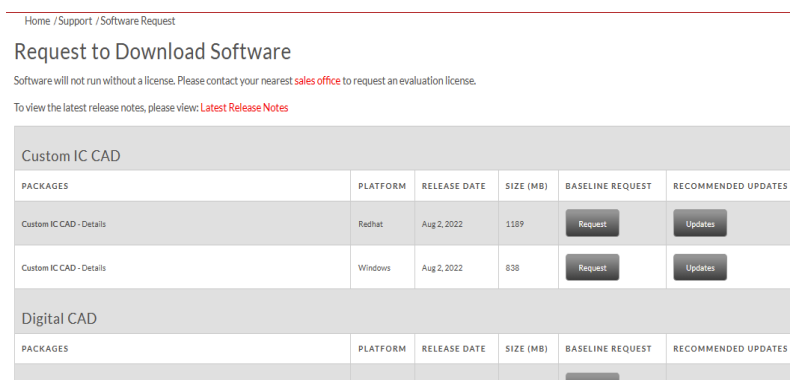
4. Locate the Silvaco product package needed for the requisite operating system.

- o There is a "Details" link on each package that details the components of each package.
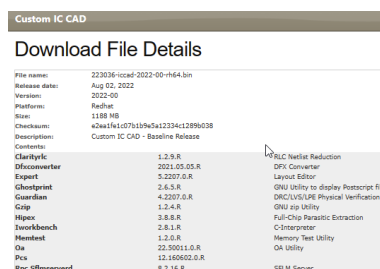
5. Once identified, click Request.

PACKAGES	PLATFORM	RELEASE DATE	SIZE (MB)	BASELINE REQUEST	RECOMMENDED UPDAT
Custom IC CAD - Details	Redhat	Aug 2, 2022	1189	Request	Updates

6. On the next page, fill out the request form. Include a general description of the end use of the software (technology application, and purpose).
   o This is a requirement; any ambiguity or inaccuracy may delay software delivery.

Software Request Form

Name	
Email Address	
Company Name	
Tool of Interest	iccad
Version	2022-00
Platform	Redhat
Intended Destination	Select
Intended Use	
Explain Intended Use:	

Go Back To Previous Page   Submit

7. Once confirmed, download access will be granted and an email will be sent with a link to download the requested software.

NOTE: Be aware the following tools have their own unique installation procedures:
- Jivaro
- Viso
- Alps
- Cello
- Viola

Follow the respective individual installation and licensing instructions in this document.

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Silvaco Software and License Installation Instructions

Ensure you are logged in to your system as a user with root/sudo privileges.

1. Before following this Installation Guide, check that these third-party packages are installed:
    - glibc.i686
    - libgcc.i686
    - libstdc++.i686
    - zlib.i686
    - xorg-x11-fonts-75dpi.noarch
    - xorg-x11-fonts-misc.noarch

    With the root user account, you can install the above packages in a terminal as shown:

    - yum install glibc.i686 libgcc.i686 libstdc++.i686
    - yum install zlib.i686
    - yum install xorg-x11-fonts-75dpi.noarch xorg-x11-fonts-misc.noarch

NOTE: For the licensing package to run,   make sure that you have redhat-lsb-core package present and installed. Follow your Linux OS guidance on how to install redhat-lsb-core package, installation commands can be different for each OS.

For Ubuntu Linux, the following directory: /usr/tmp has to be created manually for the license package.

2. Ensure the products are supported on your chosen operating system. [Click here for more details.](#)

3. Once approved for download, a link to the download site will be emailed to you. It will also be available on the Silvaco website (Support > My Downloads). Click the Download button to access the package.

My Downloads

Requests

No requests available.

Baseline Downloads

FILE NAME	VERSION	PLATFORM	RELEASE DATE	SIZE	DOWNLOAD
11344-tool_suite-2023-01-8648.run	2023-01	Redhat	Apr 6, 2023	472.6 MB	Download

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Installing the Baseline Software on Linux

Ensure the products you wish to run are supported on your chosen operating system. Click here for more details.

Once approved for download, a link to the download site will be emailed to you. It will also be available on the Silvaco website (Support > My Downloads). Click the Download button to access the package.

1. From the terminal window, execute the .bin file:

```
# bash    ./<File Name>.bin
```

If running the baseline package file with the **sudo** command as a normal user:

```
% sudo bash    ./<File Name>.bin
```

2. An installation wizard will launch. Follow the instructions on screen.
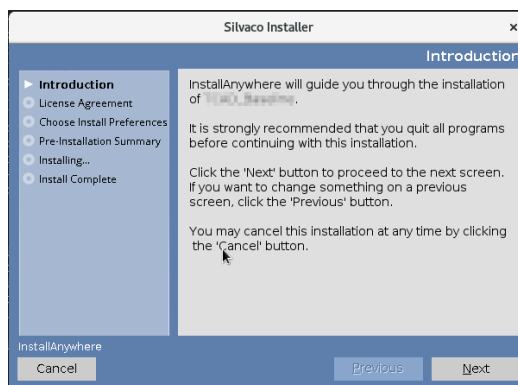
3. Read and accept the terms of the License Agreement
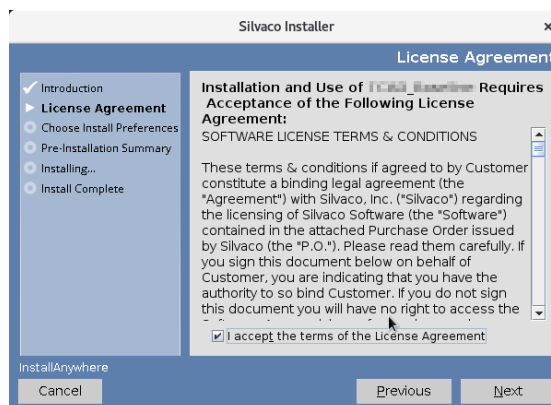
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4. Default installation location for Linux: /opt/sedatools/
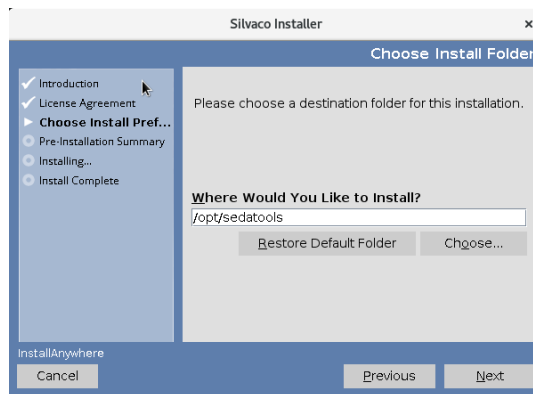
5. Check the Linux Patch Installation status and click Next button.
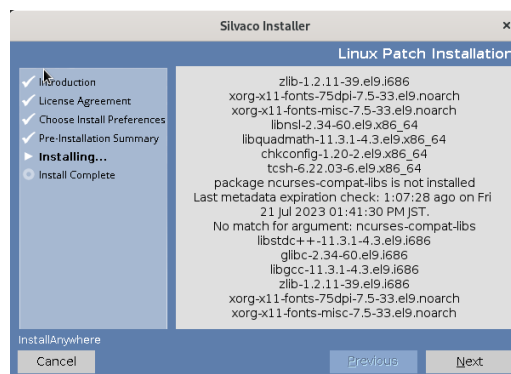
6. To confirm that the installation successfully completed, go to the installation location (set in the Installation Wizard). If the location exists and contains folders, then the installation is successful.
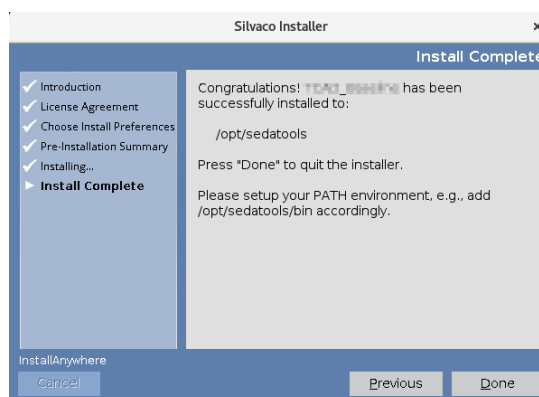
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On Unix and Linux machines, you must set an environment variable in the terminal. The two most common Unix terminal shells are the C-shell and the Bourne-Again (Bash) shell. In these cases, you need the following changes. C-shell and test users should add the following to their .cshrc file:

set path = ($path:q /<installdir>/bin)

Bash, sh (Bourne shell) and ksh users should add the following to their .profile file:

PATH="$PATH":"/<installdir>/bin"

export PATH=/<installdir>/bin:$PATH

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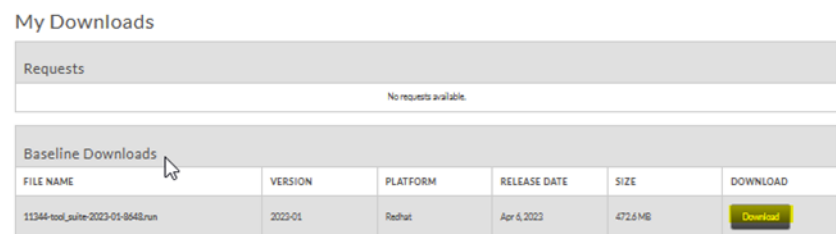
Installing the Baseline Software on Windows

Ensure the products you wish to run are supported on your chosen operating system. Click here for more details.

NOTE: Licensing software must be installed on both machines in case of remote access to the license server from the application server.

Ensure you are logged in to your system as an Administrator or have Administrator rights.

1. Once approved for download, a link to the download site will be emailed to you. It will also be available on the Silvaco website (Support > My Downloads). Click the Download button to access the package.


2. Right click on the Silvaco Installer Icon and click "Run as administrator" on the newly opened menu to run the executable. Follow the instructions on the installation wizard.
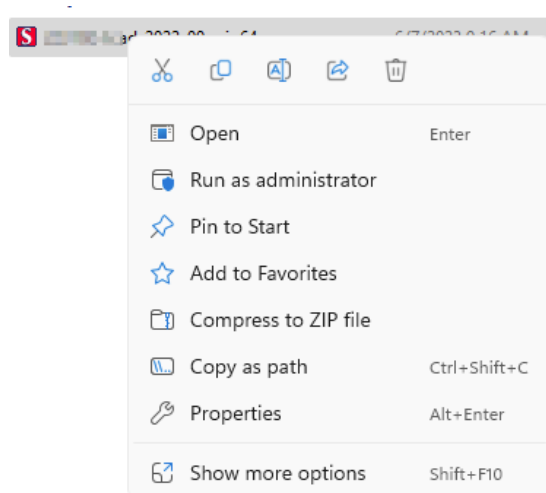
If you see the "User Account Control" dialog box, click the "Yes" button.
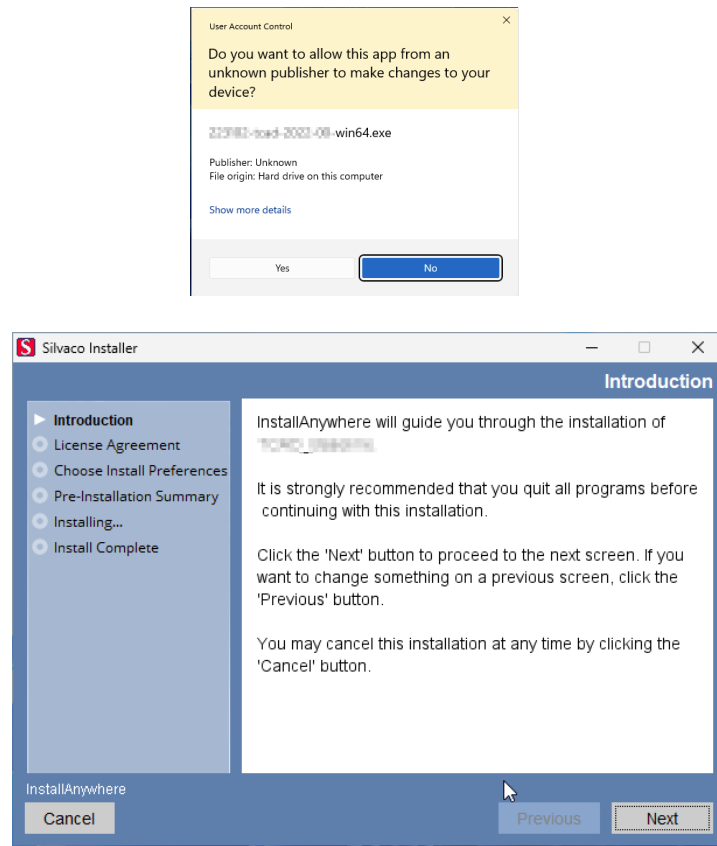
3. Read and accept the terms of the License Agreement.
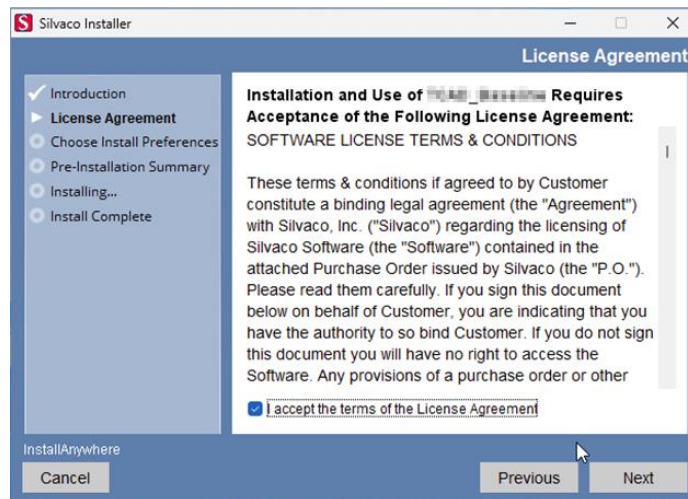
4. The default installation location in Windows is C:\sedatools.
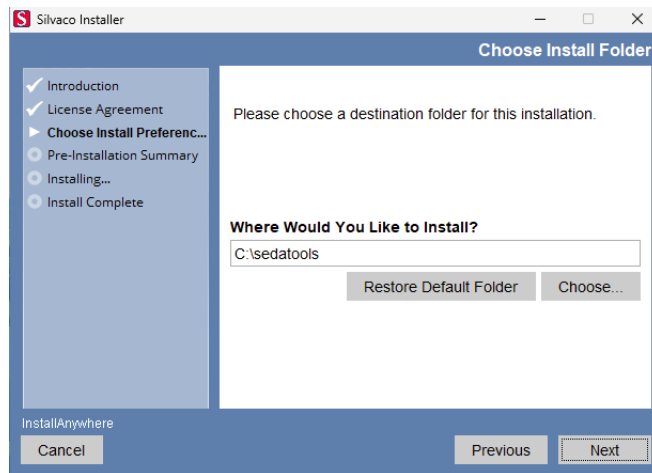
If you see a Windows Defender warning about "spic_console.exe", approve it by clicking the "Allow Access" button.
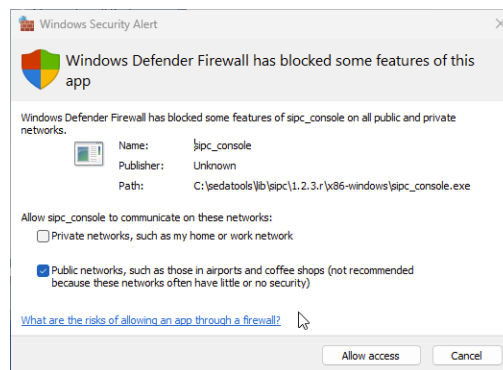
5. Once the installation is complete, reboot the system.
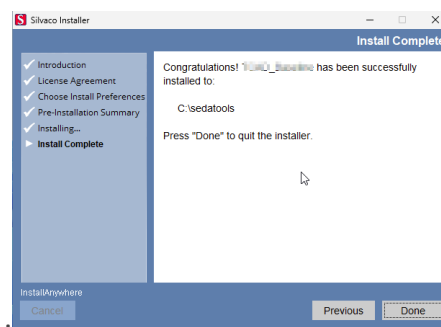
6. To confirm that the installation successfully completed, go to the installation location (set in the Installation Wizard). If the location exists and contains folders, then the installation was successful.

Applying Software Updates on Linux

Software updates may be applied to an existing Silvaco installation. The update files have a .ssu file type. This update will add new versions of tools to your existing installation area. Your original versions will not be deleted and will remain accessible to users.

NOTE: Make sure you are installing the correct software update package to your baseline software.

1. In a Linux terminal type:

    o ***<Install_Directory>*/bin/sman**
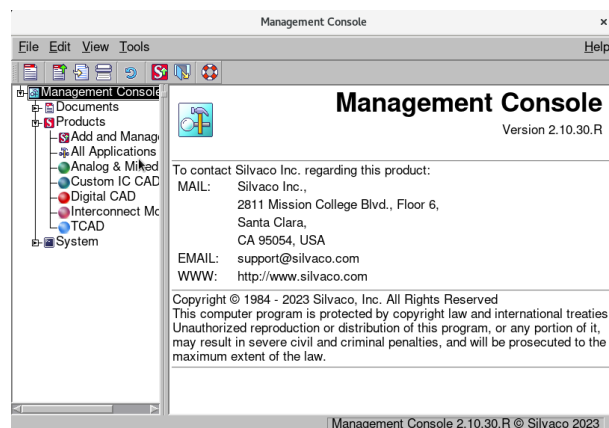
2. Within the SMAN utility:
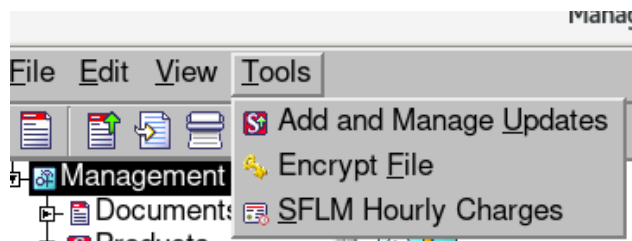
    o In the left pane go to Tools > Add and Manage Updates.

    o Click Browse and locate the .ssu file.
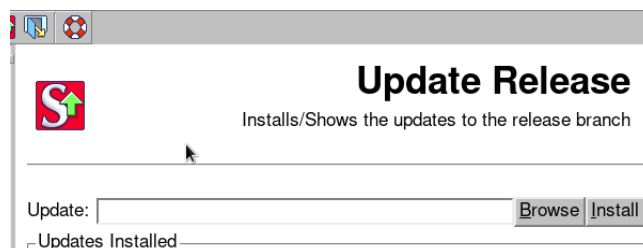
    o Click Install.

    o If prompted to update links or shortcuts, click Yes.

Applying Software Updates on Windows

Software updates may be applied to an existing Silvaco installation. The update files have a .ssu file type. This update will add new versions of tools to your existing installation area. Your original versions will not be deleted and will remain accessible to users.

NOTE: Make sure are installing the correct software update package to your baseline software.

1. In Windows Command Prompt or PowerShell enter:

    <Install_Directory>\exe\sman

    Replace <Install Directory> with the Silvaco Install Directory.

2. You may also use the Silvaco Shortcuts folder and run "Management Console" within the folder.
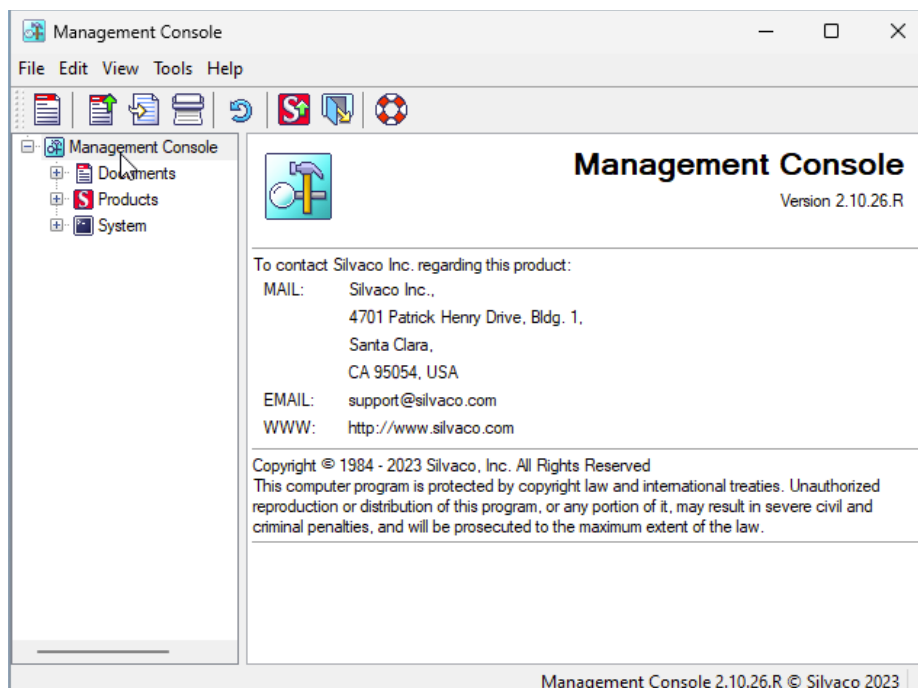
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3. Within the SMAN utility:

- o In the left pane go to Tools-> Add and Manage Updates.
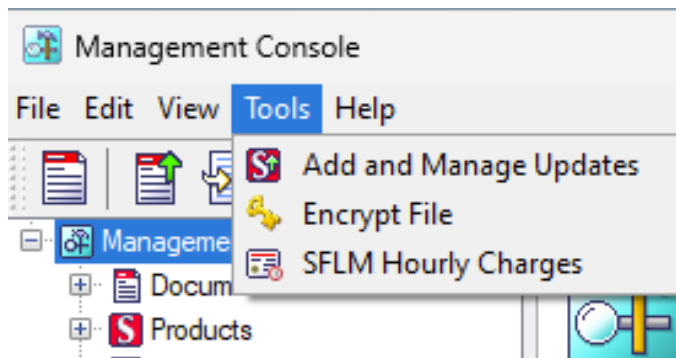
- o Click Browse and locate the .ssu file.
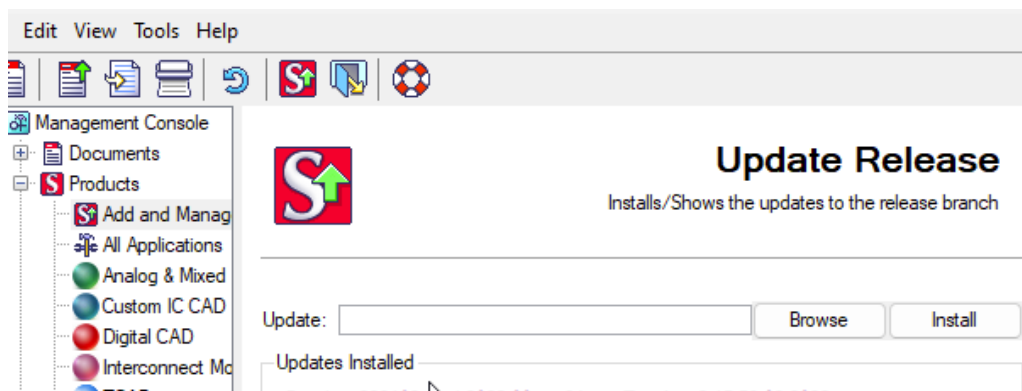
- o Click Install.

  - o If prompted to update links or shortcuts, click Yes.

License Server Setup

Licensing server programs are not contained in the application installation package file. You may obtain this installation package from the Downloads page on the Silvaco website.

Licensing server installation is only necessary for a licensing server. If the machine's task is only an application server, this section does not apply.

License server overview:

- Silvaco provides an SFLM License Server and a FlexLM Licensing Server
- SFLM is a Silvaco developed, owned, and maintained licensing system
- FlexLM is provided by a third-party licensing system
- Most Silvaco applications support both licensing systems
- Silvaco recommends using a FlexLM licensing server whenever possible

NOTE: **Jivaro, Viso, Belledonne, Brenner, Cello, and Viola** only support **FlexLM Licensing Server.**

Compatibility varies depending on the product used and how it is used. Consult with the person in charge before making your selection.

FlexLM Licensing Server

Installing the licensing package:

To use a FlexLM license to access Silvaco tools, request and download the Licensing baseline package available on the Silvaco website, along with the Silvaco product downloads.

Linux - FlexLM

- Generate a FlexLM HostID

  A HostID is required by Silvaco to generate a license, follow the steps below to generate this HostID.

  - In a Linux terminal run the command:
    - ***<Install_Directory>*/bin/lmhostid**

      Replace <Install Directory> with Silvaco Install directory.

      For example, if the installation directory is "/opt/sedatools":

      /opt/sedatools/bin/lmhostid

      This command will output a HostID number. Send the HostID to Silvaco for a license to be issued.

Finding host IDs on machines with multiple network adapters.

If the machine where your product is installed or where the license server is hosted has multiple network adapters, running lmhostid command returns one host ID for each network adapter.

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NOTE: Only one of the host IDs must be used. Usually, it is the first one that represents a physical network adapter.

2. Check FlexLM Version

    <mark>Run <Install Directory>/bin/flexlm -WV</mark>

    For example, if the install directory is "/opt/sedatools"

    ```
    /opt/sedatools/bin/flexlm -WV
    ```

3. Modifying FlexLM license

    Once the FlexLM license file is received, it must be manually modified.

SERVER your_server 00e59078086 27000
daemon simucad

#License
FEATURE A_Silvaco_Apps simucad xxxxxx-dec-2099 X 99F8B24D0X6E3
:
.

- Open the license file issued by Silvaco.

- Find and replace the (your_server) field with the name of the machine.

- Find the DAEMON/daemon or VENDOR/vendor line and insert the path to the simucad or ngld daemon there. The path can be found in the lib folder of the Silvaco installation directory.

    "daemon simucad *<Install_Directory>*/lib/flexlm/*<Version>*/x86_64-linux/simucad"

  Or

    "vendor ngld *<Install_Directory>*/lib/flexlm/*<Version>*/x86_64-linux/ngld"

  Or

    "vendor edxactd *<Install_Directory>*/lib/flexlm/*<Version>*/x86_64-linux/edxactd"

Replace <Install Directory> with the Silvaco install directory and <Version> with FlexLM version.
For example, if the machine name is "server1.silvaco.com", the install directory is "/opt/sedatools", and theFlexLM version is "11.16.2.R" (result of step 2), then your license file header will look like this:

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```
SERVER    server1.silvaco.com    00e59078086 27000
daemon simucad    /opt/sedatools/flexlm/11.16.2.R/x86_64-linux/simucad

#License
FEATURE A_Silvaco_Apps simucad xxxxxx-dec-2099 X 99F8B24D0X6E3
:
:
```

NOTE: On Linux systems, it is strongly recommended that lmgrd be run as a non-privileged user (not root).

3. Start the FlexLM server with the license file
    <Install_Directory>/bin/lmgrd -c *<license file>* -l *<log file>*
    Replace to <Install Directory> with the Silvaco installation directory, <license file> with the full path name of license file, and <log file> with full path name of log file.
    For example, if the license file name is /opt/sedatools/etc/license.lic
    and the log file name is /opt/sedatools/var/license.log, then the start command will be:

```
/opt/sedatools/bin/lmgrd -c /opt/sedatools/etc/license.lic -l /opt/sedatools/log/license.log
```

NOTE: FlexLM does not have automatic startup functionality. Therefore, you need to manually start the license server program each time the machine is booted or restarted. If you want to enable automatic startup, you can add it to /etc/rc.local or create a systemd unit.

4. Connecting to a FlexLM server

    Ensure the following environmental variables are set.
    In a Linux terminal this can be done with the "export" command if using the bash shell or "setenv" command if using csh.
    For example, if the license file is /opt/sedatools/etc/license.lic:
    - o export LM_LICENSE_FILE=/opt/sedatools/etc/license.lic
    - o export SFLM_FLEXLM=1

    SFLM_FLEXLM is an environment variable specifying SFLM and FlexLM priorities (if the application supports both licensing servers).
    0: Do not use FlexLM, only use SFLM
    1: Only use FlexLM

    By default, the application first attempts to obtain a license from SFLM, and then if that fails, attempts to obtain license from FlexLM.
    LM_LICENSE_FILE is a common FlexLM environment variable. If you want to affect only the tools that operate with the vendor daemon "**simucad**"(e.g., TCAD/EDA tools), you can use the environment variable **SIMUCAD_LICENSE_FILE** instead of **LM_LICENSE_FILE**.
    Similarly, if you want to affect only the tools (e.g. Jivaro, Viso, Belledonne, or Brenner)

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that operate with the vendor daemon "**exactd**", you can use the environment variable **EDXACT_LICENSE_FILE** instead of **LM_LICENSE_FILE**.

Each FEATURE line in the license file describes the vendor daemon to be used.

==**See Installation of Alps==**

5. Confirming that the FlexLM licenses are installed

    Execute the command below in a terminal:

    <Install_Directory>/bin/lmstat -a

    For example, if the install directory is "/opt/sedatools":

```
/opt/sedatools/bin/lmstat -a
```

If the firewall software in the license server machine is enabled, refer to **'FlexLM with Firewall'** and **'LinuxStandard Firewall'** in **'Q10: How to configure Firewall settings'.**

If you want to set FlexLM to start automatically, change the command in step 3 to /etc/rc.local.

Windows - FlexLM

1. Generate a FlexLM HostID

    A HostID is required by Silvaco to generate a license, follow the steps below to generate your HostID.

    In the Windows Command Prompt or PowerShell, run the lmutil command in the FlexLM folder found in the Silvaco installation directory

    <Install_Directory>\libflexlm*<Version Number>*\x86_64-windows\lmutil lmhodtid -n

    Replace *<Install directory>* with installation directory name and *<Version Number>* with the FlexLM version number.

    For example, if the install directory is C:\sedatools and Version 11.14.2.R:

```
C:\sedatools\lib\flexlm\11.14.2.R\x86_64-windows\lmutil lmhostid    -n
```

    This command will output a HostID number. Send the HostID to Silvaco for a license to be issued.

2. Modifying the FlexLM license

    Once the FlexLM license file is received, it must be manually modified.

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```
SERVER your_server 00e59078086 27000
daemon simucad


#License
FEATURE A_Silvaco_Apps simucad xxxxxx-dec-2099 X 99F8B24D0X6E3
:
```

- Open the license file issued by Silvaco.

- Find and replace the "your_server" field with the name of the machine.

- Find the DAEMON/daemon or VENDOR/vendor line and insert the path to the **simucad**

  daemon, found in the lib folder of the Silvaco installation directory.
  > daemon simucad ***Install_Directory***\lib\flexlm***Version***\x86_64-
  > windows\simucad

  For example, if the machine name is "server1.silvaco.com", the install directory is "c:\sedatools",
  FlexLM version is 11.16.2.R, and the vendor daemon is "simucad":

```
SERVER    server1.silvaco.com    00e59078086 27000
daemon simucad    c:\sedatools\lib\flexlm\11.16.2.R\x86_64-windows\simucad

#License
FEATURE A_Silvaco_Apps simucad xxxxxx-dec-2099 X 99F8B24D0X6E3
:
```

3. Start the FlexLM Server with the license file

- Open PowerShell with admin rights.

  Refer to [Q11: How to Open PowerShell with Admin Rights?](#) If needed.

- Change the current directory to the FlexLM folder found in the Silvaco installation
  directory:
  > cd *Install_Directory*\lib\flexlm*Version_Number**OS_Version*
  > ***Example:***

```
cd   C:\sedatools\lib\flexlm\11.16.2.R\x86_64-windows\
```

- Then run the run the command:
  > ./lmgrd -c *License file* -l *Log file*
  > Replace <License file> with full path of license file, <Log file> with full path of log file.

  For example, if the license file path is "C:\sedatools\etc\license.lic" and log file path

  is: C:\sedatools\var\flexlm.log:

```
.\lmgrd -c C:\sedatools\etc\license.lic -l C:\sedatools\var\flexlm.log
```

4. Connecting to a FlexLM server

Ensure the following environmental variables are set:

- In a Windows Command Prompt or PowerShell users can use the SETX command to set environmental variables: LM_LICENSE_FILE (or SIMUCAD_LICENSE_FILE).
    - setx LM_LICENSE_FILE "c:\sedatools\etc\license.lic"
    - setx SFLM_FLEXLM "1"

    SFLM_FLEXLM is an environment variable specifying SFLM and FlexLM priorities. (If application supports both Licensing server.)
    0: Do not use FlexlM, only use SFLM
    1: Only use FlexLM.

5. Confirming that the FlexLM licenses are installed

Execute the command below Windows Command Prompt/PowerShell

   <Install Directory>\lib\flexlm*<Version Number>*\x86_64_windows\lmutil lmstat -a

Replace *<Install Directory>* with Silvaco Install directory and *<Version Number>* with FlexLM version.

For example, if the install directory is c:\sedatools and the version number is 11.16.2.R:

```
C:\sedatools\lib\flexlm\11.16.2.R\x86_64-windows\lmutil lmstat -a
```

If the firewall software in license server machine is enabled, refer to FlexLM with Firewall and Windows Standard Firewall in **Q10: How to configure FireWall settings?**

If you want to set FlexLM to start automatically, configure service with LM Tools:

1. Start LM Tools

   <Install Directory>\lib\flexlm\<Version>\x86_64-windows\lmtools.exe

   For example, if the install directory is c:\sedatools and the version number is 11.16.2.R:

```
C:\sedatools\lib\flexlm\11.16.2.R\x86_64-windows\lmtools
```

2. Open the Configure tab

3. Fill out the parameter fields

   Fill out the following fields with the full path:

- Path to the lmgrd.exe file
- Path to license file
- Path to the debug log file (use the default)

Next check the "Start Server at Power Up" and "Use Service" checkboxes.

For example, if the install directory is C:\sedatools, the FlexLM version is 11.19.2.R, and the license file name is C:\sedatools\etc\license.lic:
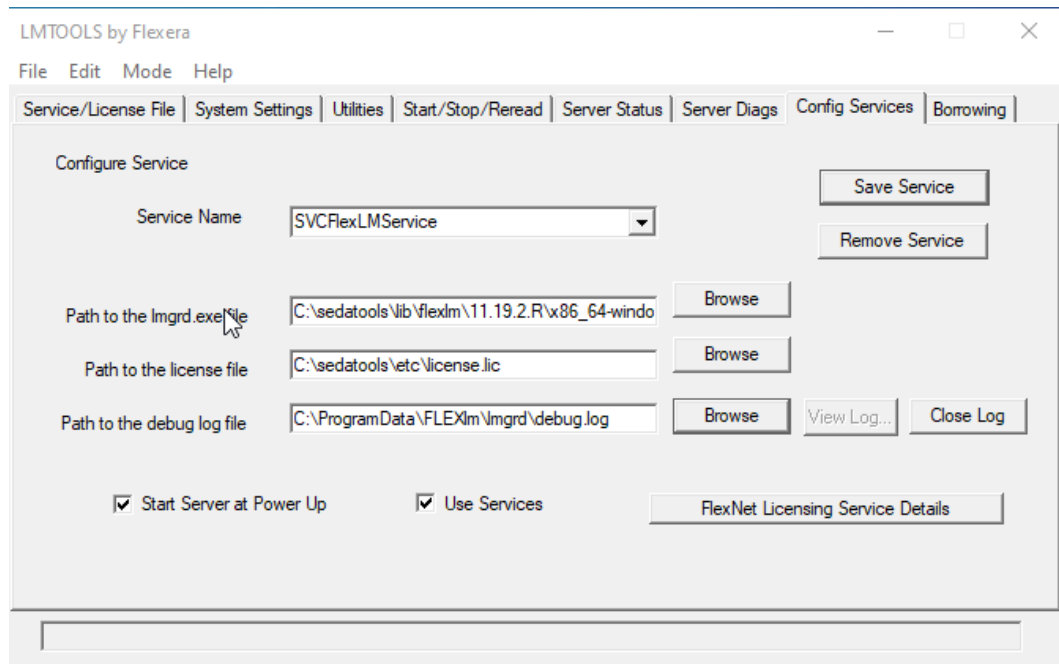
SFLM License Server

Installing and starting SFLM server

If an SFLM license server has not yet been installed, follow these instructions. The SFLM server hosts floating licenses for the Silvaco tools. Installation must be performed with root access or admin privileges.

Linux - SFLM

1. Open Linux terminal

2. Run SFLM license service installation command with admin rights
   sudo <Install_Directory>/bin/sflm -install
   Example
   Installation directory: /opt/sedatools

```
sudo /opt/sedatools/bin/sflm -install
```

Windows - SFLM

1. Open PowerShell with admin rights.
   Refer to **Q11: How to Open PowerShell with Admin Rights?** in FAQ if needed.

2. Run SFLM service installation command.

   <Install_Directory>\exe\sflm -install
   Example
   Installation Directory: C:\sedatools

```
C:\sedatools\exe\sflm -install
```

If the firewall software in license server machine is enabled, refer to **Firewall settings for SFLM (Linux)** or **Firewall settings for SFLM(Windows).**

In either case, the SFLM license server installation will begin. You will be prompted to set a password. This password will be used as the administrator password within the SFLM server. After installation, reboot the server.

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Silvaco Software and License Installation Instructions

1. Viewing SFLM server web page
   - Viewing the SFLM server page using the SMAN Utility:
     After installation of the SFLM server, users can access the server through the SMAN Utility

   Linux
   - In a Linux terminal enter:

     <Install_Directory>/bin/sman

     Replace <Install Directory> with Silvaco install Directory.

     For example, if the install directory is /opt/sedatools:

     ```
     /opt/sedatools/bin/sman
     ```

   Windows
   - In Windows PowerShell enter the command below or Click "Management Console" in the Desktop Shortcut folder.
     <Install_Directory>\exe\sman

     Replace <Install Directory> with Silvaco install directory.

     For example, if the install directory is C:\sedatools:

     ```
     C:\sedatools\exe\sman
     ```

   The Management Console Desktop Shortcuts in "S.EDA Tools" Shown on the Desktop
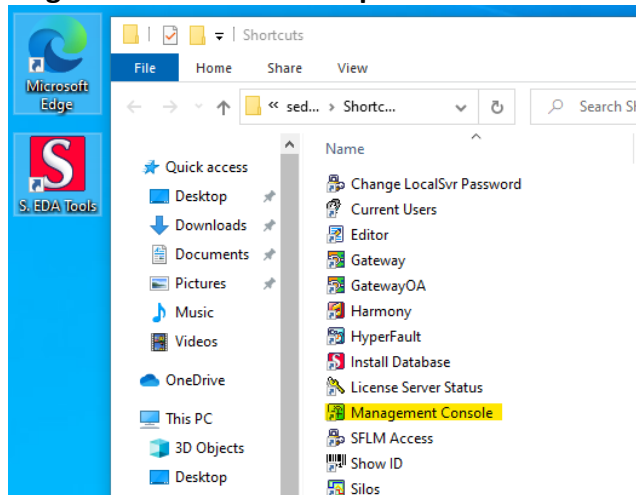
From within "Management Console (SMAN)", you can expand the left pane System > Licensing > Management and select the SFLM server you want to view. In Windows the webpage will be embedded in the SMAN window.
If you have multiple servers configured, you can view these in SMAN as well (System >Licensing >Management).

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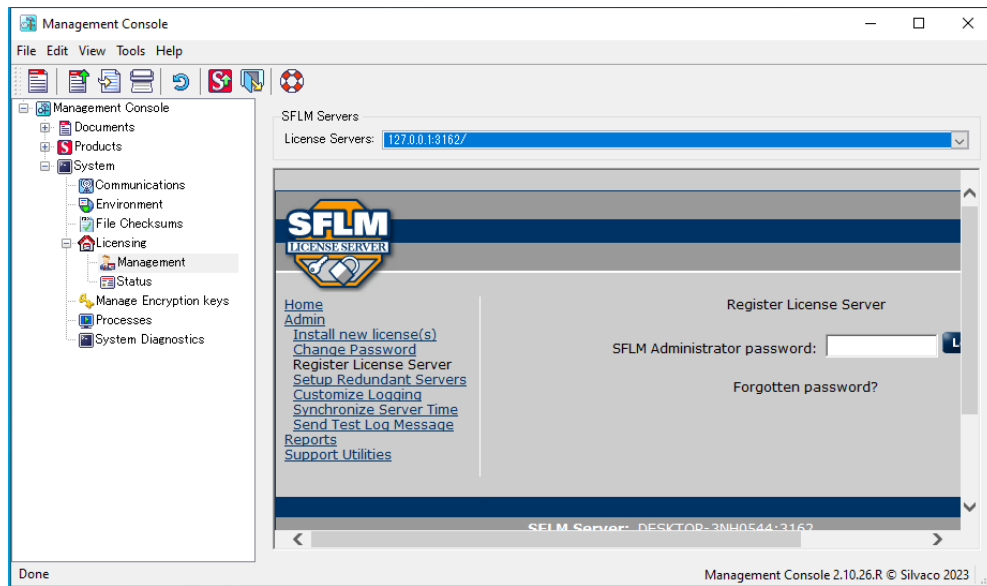
- Viewing the SFLM server page using a browser:

Open any browser and you can view the page by the name of the machine, its IP address, or via the loop back address if you are logged into the license server.

- http://<Machine_Name>:3162
- http://<Machine_IP>:3162
- http://127.0.0.1:3162
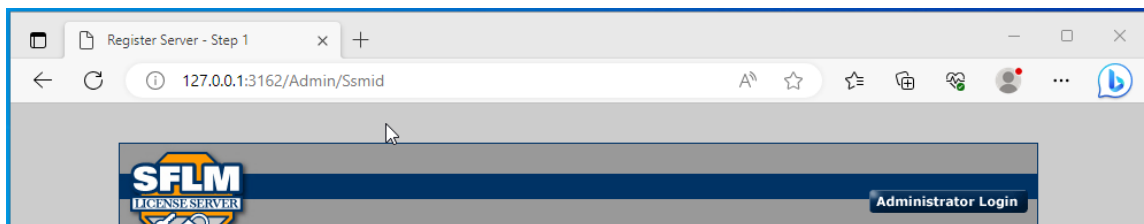
2. Registering SFLM server (online or offline)

   Online Registration

   1. Use the SFLM administrative password set during the SFLM Server Installation step to log in.
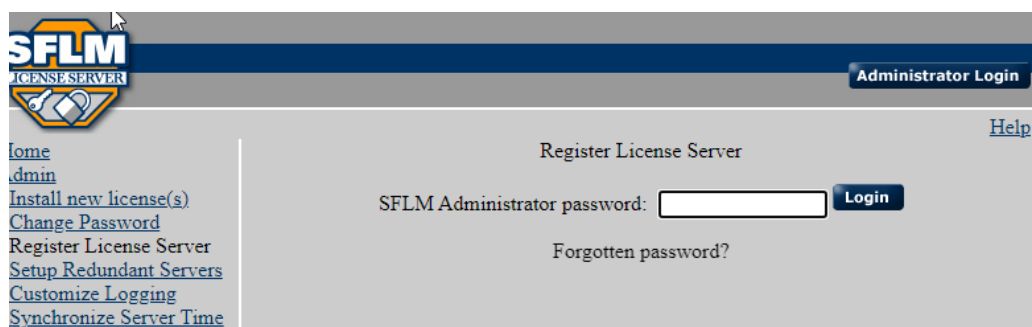
2. Click the Register Online button.
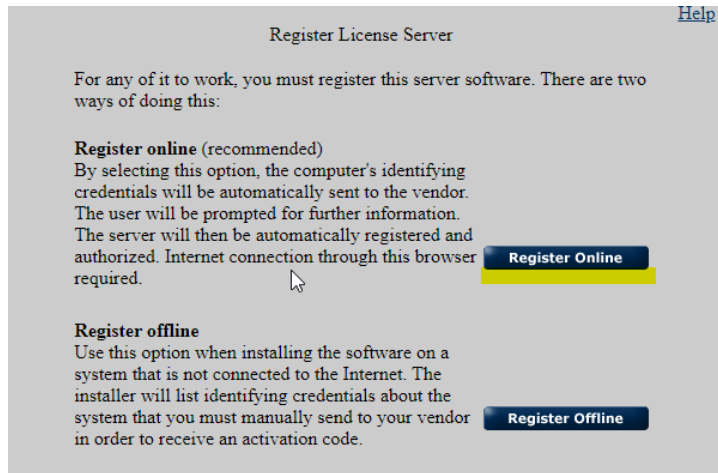
3. Complete the fields on the following page, once complete   click the Next button.

4. A confirmation page will load if done correctly, then click Next to continue.
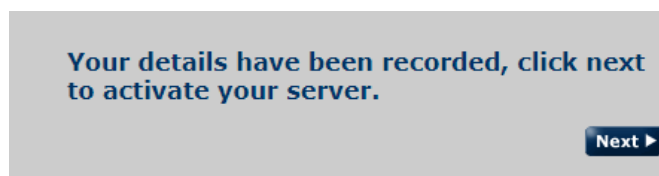
5. The next page will display a server "Code Name" or HOSTIDs in the form 0SSMID########.
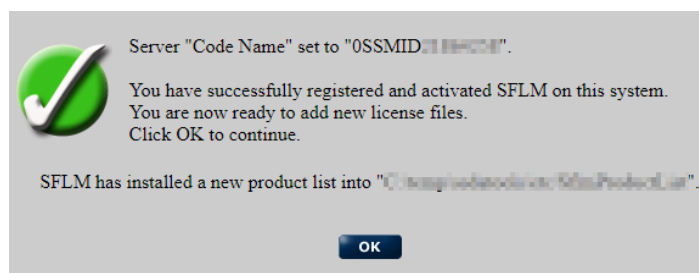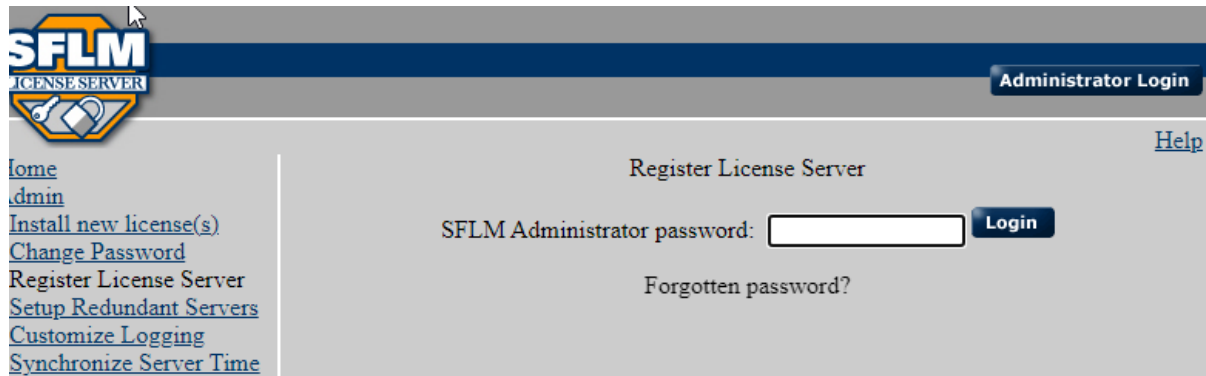
6. Send the 0SSMID ID to Silvaco for a license to be issued. Once a license has been issued, follow the "Installing SFLM License File" instructions.

Offline Registration
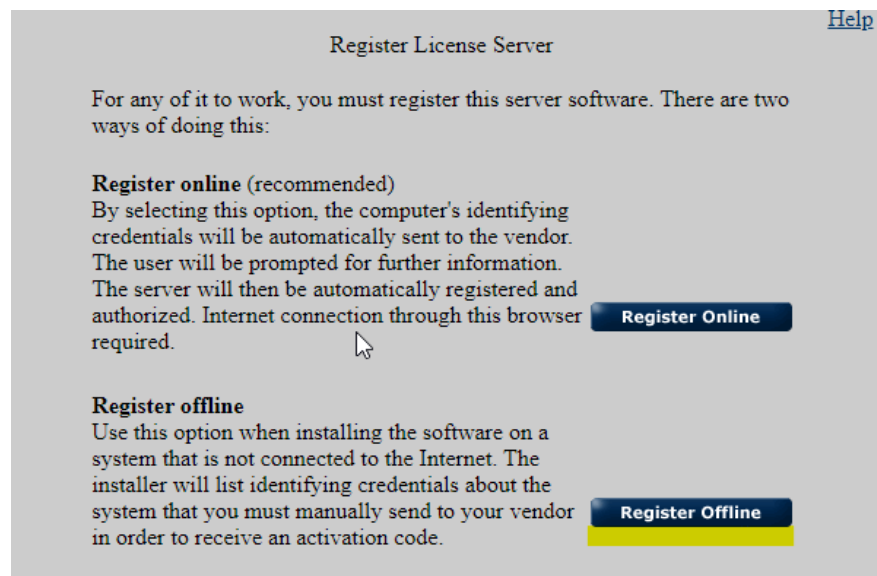
> **For SFLM servers not connected to the internet, the SFLM registration may be completed offline. However, whenever possible, online registration is recommended.**

1. Enter SFLM administrative password set during the SFLM Server Installation step.

2. Click the Register Offline button.

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3. Copy the displayed registration information (machine credentials, machine ID, and machine keys) in full and email it as text to Silvaco.
   Silvaco will return the code name and activation code. With this code name and activation code, registration can be completed.

4. Select Next on the Activate SFLM Server Offline page.
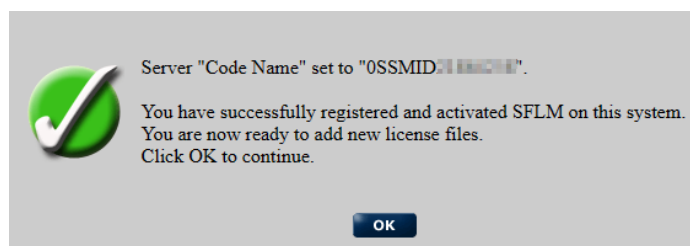
5. Enter the code name and activation code for the server and then click Next.

6. If registration was successful, the HostID (for example: 0SMID########) will appear.

Installing SFLM License File

Once a license has been generated by Silvaco, users have two ways to install it: manual or automatic.

- Go to your existing SFLM server webpage, for example http://<Machine_Name>:3162, http://<Machine_IP>:3162, or http://127.0.0.1:3162.

- Once on the SFLM main webpage click the "Install New License(s)" button.
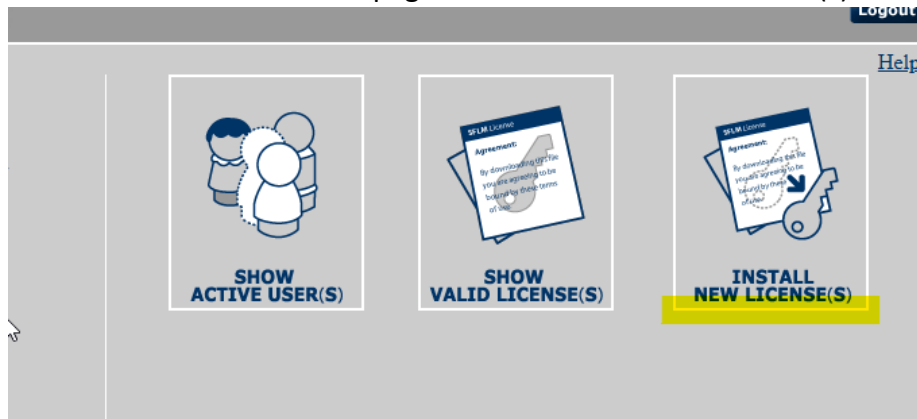
- Enter your SFLM admin password to login.
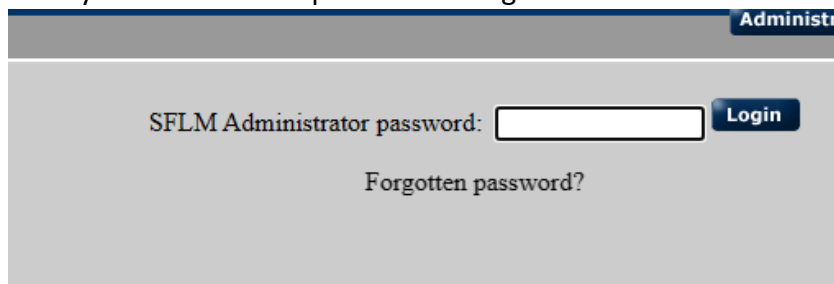
- Click the "Automatic Update" or "Installed Saved File" button.
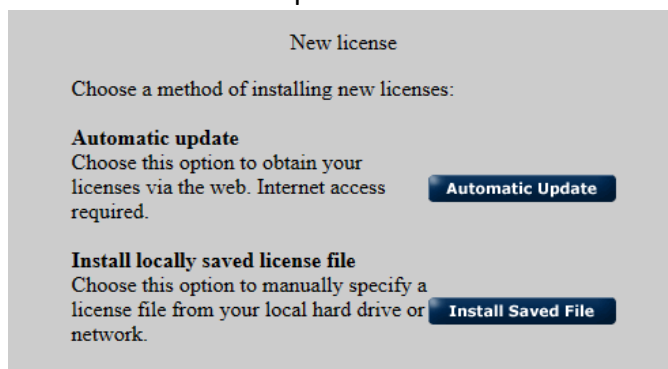
  - Selecting "Automatic Update" will download the license file from the internet and install it to your SFLM server automatically.

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o Selecting "Installed Saved File" will allow the user to select a license file from their machine to be installed on the SFLM server.

<u>The SFLM web page will confirm a successful installation and the valid licenses will be viewable within the SFLM web page.</u>

- Connecting Client to Existing SFLM Server

If an SFLM license server already exists, users can set their client machine to connect to the license server.

Linux

1. In a Linux terminal type:

   <Install_Directory>/bin/sflm_access

   Replace <Install Directory> with Silvaco Install Directory.

   For example, if the install directory is /opt/sedatools:

```
/opt/sedatools/bin/sflm_access
```

Windows

2. In Windows PowerShell enter the below command or click "SFLM Access" in desktop shortcut folder.
   - <Install_Directory>\exe\sflm_access
   - Replace <Install Directory> with the Silvaco install directory.
   - For example, if the install directory is C:\sedatools:

```
C:\sedatools\exe\sflm_access
```

"SFLM Access" desktop shortcuts in S.EDA Tools on desktop
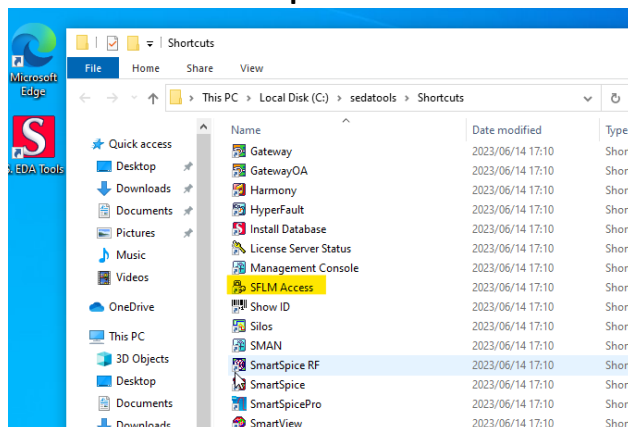
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Within the SFLM Access interface, the Configure button will open a wizard from which you can add a new server. Follow the wizard or read Chapter 4 of the Standard Floating License Manager: Installation and User's Guide for more details on how to use SFLM Access.

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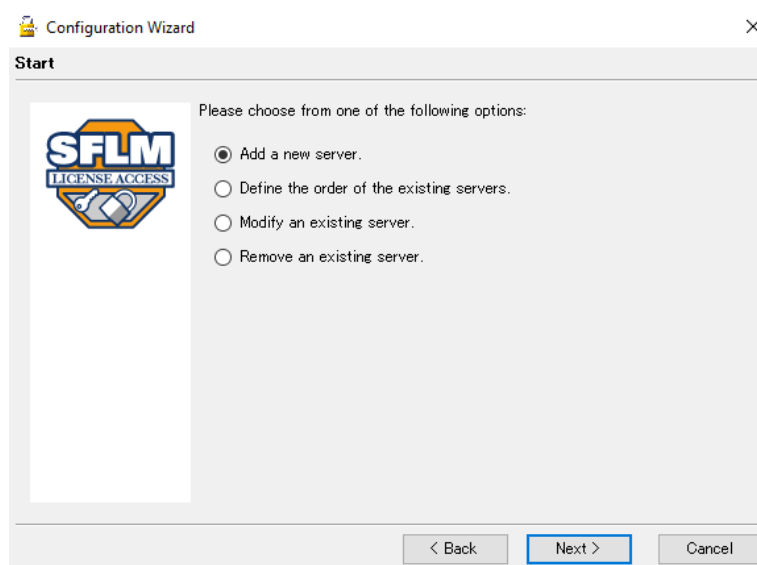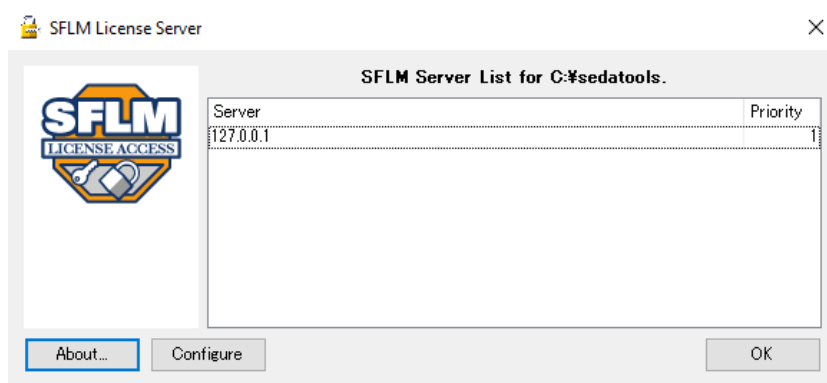
Installation of Alps .bin Package

Alps is a package containing the following tools: Viso, Belledonne, and Brenner.
You need to install Alps if you want to use Belledonne, Brenner, or Viso up to 2022.2 versions.
You also need to install Alps if you want to use Viso (up to 2022.2) in conjunction with Belledonne.

A .bin package is the primary installation package (where a .ssu is an update).

NOTE: For Alps, you do not need to install a .bin before a .ssu, but this is not necessarily the case for other Silvaco products.

The installation package can be downloaded from the Download section (www.silvaco.com -> Support -> Downloads -> Software Request). Once the installation package is requested, an email with a download link will be sent.

Alps .bin package currently appears under the "Request to Download Software" web page under: "Belledonne, Viso and Brenner"

1. Obtain the .bin package:

Go to www.silvaco.com -> Support -> Downloads -> Software Request). Download the latest baseline installation. The file typically has a name format like: AAAA-alps-BBBB-CC-rh64.bin (for example: 223032-alps-2022-02-rh64.bin).

2. Copy to target directory:

Copy the downloaded .bin file to the target directory where you intend to install Alps.
Make sure the copied binary file has executable permissions. You can do this using the command "chmod +x filename.bin" in a terminal window.

3. Initiate installation:

Execute the binary file to begin the installation process.

4. Follow Silvaco Installer GUI. Upon execution, a graphical user interface (GUI) labeled "Silvaco Installer" will appear. Follow the prompts and directions provided by the installer to proceed with the installation.

5. Choose installation path.

6. Ignore any message prompting you to use root privileges during the installation process.

7. Set Environment Variables.

Set the ALPS_ROOT environment variable to point to the appropriate directory, for example:
        setenv ALPS_ROOT <installation_path>/lib/alps/<W.X.Y.Z>/x86_64-linux/

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Note: Replace <installation_path> and <W.X.Y.Z> with the actual installation path and version numbers, respectively.

8. Update the PATH environment variable to include the Alps executable directory:

    setenv PATH $ALPS_ROOT/bin:$PATH

9. From this point Alps will be accessible.

From a Unix terminal, run the following command:
"comanche -version" to check that "comanche" can be triggered

10. Documentation and tutorial are located in the following folder: $ALPS_ROOT/doc

11. Set the license file by running the command:

    setenv LM_LICENSE_FILE to point to the license

The application is now installed. In case of any issues, contact support@silvaco.com.

Installation of Alps Update (.ssu)

Alps is a package containing the following tools: Viso, Belledonne, and Brenner.
You need to install Alps if you want to use Belledonne or Brenner up to 2022.2 versions.
You also need to install Alps if you want to use Viso (up to 2022.2) in conjunction with Belledonne.

A .bin package is the primary installation package (where a .ssu is an update).
NOTE: For Alps, you do not need to install a .bin before a .ssu, but this is not necessarily the case for other Silvaco products.

An Alps .ssu installation package can be requested on your behalf by a Silvaco FAE. Once approved for download, a link to the download site will be emailed to you. The download will also be available on the Silvaco website (Support > My Downloads). Click the "Download" button to access the package.

1. Download the package file:
    *   AAAA-alps-BBBB-C-D-E-rh64.ssu (for example: 21106-alps-2022-2-36-R-rh64.ssu)

Copy it under a directory of your choice (e.g., under /tools/vendors/Silvaco). You can copy the tree where other Silvaco tools are already installed.

2. Run the "tar xvfz" command on the .ssu file

This will create an <installation_path>/lib/alps/<W.X.Y.Z>/x86_64-linux/edxact set of directories.

Note: W.X.Y.Z may vary, the version can be identified as follows: example: 2021.1.125.C is defined as: version 2021, sub version 1, sub-sub version 125. ".C" is means "custom".

3. From the installation path (for example: installPath = /tools/vendors/Silvaco), set the ALPS_ROOT

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environment variable to: <installPath>/lib/alps/<W.X.Y.Z>/x86_64-linux/

Example: setenv ALPS_ROOT /tools/vendors/Silvaco/lib/alps/<W.X.Y.Z>/x86_64-linux/

4. Update the PATH environment variable so that it includes $ALPS_ROOT/bin

Example: setenv PATH $ALPS_ROOT/bin:$PATH

5. From this point Alps will be accessible.

From a Unix terminal, run the following command:
"comanche -version" to check that "comanche" can be triggered.

6. Documentation and tutorial are located in the following folder: $ALPS_ROOT/doc

7. Set the license file by running the command:

setenv LM_LICENSE_FILE to point to the license

The application is now installed. In case of any issues, contact support@silvaco.com.

Installation of Viso

Viso is a package that contains only Viso as a tool. It does neither contain Belledonne nor Brenner.
Viso as a standalone package starts from 2023.1 version.
If you install the Viso package, you cannot use the Viso tool in it in conjunction with Belledonne or Brenner.
You need to install Alps if you want to use Viso in conjunction with Belledonne (up to 2022.1 version).

A .bin package is the primary installation package (where a .ssu is an update).

NOTE: For Viso 2023.1, only .ssu can be provided as of today.
NOTE: For Viso, you do not need to install a .bin before a .ssu, but this is not necessarily the case for other Silvaco products.

A Viso .ssu installation package can be requested on your behalf by a Silvaco FAE. Once approved for download, a link to the download site will be emailed to you. The download will also be available on the Silvaco website (Support > My Downloads). Click the "Download" button to access the package.

1. Download the following package file: AAAA-viso-BBBB-C-D-E-rh64.ssu (for example: 21203-viso-2023-1-69-R-rh64.ssu).

Copy it into a directory of your choice (e.g., under /tools/vendors/Silvaco). You can copy the tree where other Silvaco tools are already installed.

2. Run the following command "tar -xvfz" the .ssu file.

It will unzip into an <installation_path>/lib/viso/<W.X.Y.Z>/x86_64-linux/edxact set of directories.

Note: W.X.Y.Z may vary. For example: 2023.1.69.R is version 2023, sub version 1, sub-sub version 69. ".R" is release.

3. From the installation path (for example: installPath = /tools/vendors/Silvaco):

Set the VISO_ROOT environment variable so that is points to the edxact directory:

<installPath>/lib/viso/<W.X.Y.Z>/x86_64-linux/edxact

Example: setenv VISO_ROOT /tools/vendors/Silvaco/lib/viso/<W.X.Y.Z>/x86_64-linux/edxact

4. Update the PATH environment variable (using export or setenv command) so that it includes folder: $VISO_ROOT/bin

Example: setenv PATH $VISO_ROOT/bin:$PATH

5. From this point Viso should be accessible.

Run the following command from a terminal:

"viso -version" to check that "viso" can be started.

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6. Documentation and tutorial are located in $VISO_ROOT/doc.

7. Setting the license file by running the command:

setenv LM_LICENSE_FILE to point to the license

The application is now installed. In case of any issues, contact support@silvaco.com.

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Installation of Jivaro .bin Package

NOTE: A .bin package is the primary installation package (while a .ssu is an update).

NOTE: For Jivaro, you do not need to install a .bin before a .ssu, but this is not necessarily the case for other Silvaco products.

The installation package can be downloaded from the Download section (www.silvaco.com -> Support -> Downloads -> Software Request). Once the installation package has been requested, an email with a download link will be sent.

1. Obtain the .bin package.

Go to www.silvaco.com -> Support -> Downloads -> Software Request. Download the latest baseline installation. The file typically has a name format like: AAAA-jivaro-BBBB-CC-rh64.bin (for example: 233201-jivaro-2023-01-rh64.bin).

2. Copy to target directory.

Copy the downloaded .bin file to the target directory where you intend to install Jivaro.
Make sure the copied binary file has executable permissions. You can do this using the command "chmod +x filename.bin" in a terminal window.

3. Initiate installation. Execute the binary file to begin the installation process.

4. Follow Silvaco Installer GUI. Upon execution, a graphical user interface (GUI) labeled "Silvaco Installer" will appear. Follow the prompts and directions provided by the installer to proceed with the installation.

5. Choose installation path.

6. Ignore any message prompting you to use root privileges during the installation process.

7. Set environment variables.

Set the JIVARO_ROOT environment variable to point to the appropriate directory, for example:
setenv JIVARO_ROOT <installation_path>/lib/jivaro/<W.X.Y.Z>/x86_64-linux/

Note: Replace <installation_path> and <W.X.Y.Z> with the actual installation path and version numbers, respectively.

8. Update the PATH environment variable to include the Jivaro executable directory:

setenv PATH $JIVARO_ROOT/bin:$PATH

9. Jivaro and Jivaro Pro are now accessible.

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From a Unix terminal, run the following commands:

"jivaro -version" to check that "jivaro" can be triggered

"jivaro -pro -version" to check that "jivaro Pro" can be triggered

10. Documentation and tutorial are located in $JIVARO_ROOT/doc

11. Set the license file:

setenv LM_LICENSE_FILE (or EDXACT_LICENSE_FILE)

to point to the license.

After that the application is installed. In case of any issues, contact support@silvaco.com.

Installation of Jivaro Update (.ssu)

NOTE: A .bin package is the primary installation package (while a .ssu is an update).

NOTE: For Jivaro, you do not need to install a .bin before a .ssu, but this is not necessarily the case for other Silvaco products.

A Jivaro .ssu installation package can be requested on your behalf by a Silvaco FAE. Once approved for download, a link to the download site will be emailed to you. The download will also be available on the Silvaco website (Support > My Downloads). Click the "Download" button to access the package.

1. Download the following package file:
   - AAAA-jivaro-BBBB-C-D-E-rh64.ssu (for example: 21347-jivaro-2023-1-55-R-rh64.ssu)

Copy it into into a directory of your choice (e.g., under /tools/vendors/Silvaco). You can copy into the path where other Silvaco tools are already installed.

2. Run the "tar -xvfz" command on the .ssu file
   - This will create an <installation_path>/lib/jivaro/<W.X.Y.Z>/x86_64-linux/ set of directories
   - Note: W.X.Y.Z may vary, version can be identified as follows:

Example: 2023.1.55.R is defined as: version 2023, sub version 1, sub-sub version 55. ".R" means "release"

3. From the installation path (for example: installPath = /tools/vendors/Silvaco):

Set the JIVARO_ROOT environment variable to points to:

<installPath>/lib/jivaro/<W.X.Y.Z>/x86_64-linux/
Example: setenv JIVARO_ROOT /tools/vendors/Silvaco/lib/jivaro/<W.X.Y.Z>/x86_64-linux/

4. Update the PATH environment variable so that it includes $JIVARO_ROOT/bin

Example: setenv PATH $JIVARO_ROOT/bin:$PATH

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5. Jivaro and Jivaro Pro are now accessible.

From a Unix terminal, run the following commands:

"jivaro -version" to check that "jivaro" can be triggered

"jivaro -pro -version" to check that "jivaro Pro" can be triggered

6. Documentation and tutorial are located in the following folder: $JIVARO_ROOT/doc

7. Set the license file by running the command:

setenv LM_LICENSE_FILE /path/to/license

After that the application is installed. In case of any issues, contact support@silvaco.com.

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Installation of Cello

The installation package can be downloaded from the Download section (www.silvaco.com -> Support -> Downloads -> Software Request). Once the installation package has been requested, an email with a download link will be sent.

Read through this section before installing the product.

To install the tool suite, use the install self-extractable archives to unpack the software and perform the installation routine.

Run the installation package, where <version> should match the downloaded file:

shell> ./11232-tool_suite-<version>.run

Read and accept Silvaco Software License Agreement.

Define the absolute installation path. The default is the current directory.

After completing those steps, Cello will be successfully installed on your system. Next configure the FlexLM license server for Cello and the layout editor.

1. Silvaco license installation.

   Silvaco Cello software uses the FlexLM license manager, a popular license management solution used in the software industry.

   This section provides detailed instructions for setting up a FlexLM-based license server. Procedures are given for Linux and Sun Solaris operating systems. Consult your system administrator if you are not familiar with Unix setup commands.

   The following list summarizes the detailed instructions:

   1. Update the SERVER and VENDOR lines in the license.dat file.

   2. Verify that the host name and HostID are correct.

   3. Start the server license manager daemon.

   4. Verify that the Silvaco license daemon is running, and that the authorization is correct using the lmstat utility.

   The Silvaco software license key is emailed directly to licensed users. If you cannot find the licensing information, contact Silvaco Customer Support or your local sales representative.

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2. Setting up the license server.

   To set up your license server:

   - Copy and paste the licensing key you received from Silvaco or enter the information from it into a license.dat file. The license file can reside anywhere in your system. Next, open the license.dat file and edit the following information:

   • Update the SERVER entry your server host name. The syntax of this line is:

   "SERVER host_name host_id 1710" where host name is the host name of your license server

   • Verify that your host ID is correct using the following command to display its value:

   shell> <install_dir>/flexlm_dist/lmutil lmhostid

   • Update the VENDOR line to the full Silvaco license deamon (ngld) path:

   VENDOR ngld <install_dir>/flexlm_dist/ngld

   2. Set NGLD_LICENSE_FILE environment variable to point to the local copy of your license.dat file using the options below.

   - From C Shell:

   shell> setenv NGLD_LICENSE_FILE path_to_license_file

   - From other shell:

   shell> export NGLD_LICENSE_FILE=path_to_license_file

   - Verify your license path through the following command at the shell prompt:

     shell> echo $NGLD_LICENSE_FILE

   - Set NGLD_LICENSE_FILE to start up automatically when you log in by setting this environment

   variable in your shell startup script: .bashrc, .cshrc, .kshrc, or .profile files.

3. Start the license manager.

   Starting the server license manager daemon automatically starts the license daemon. To prevent security violations, make sure you are not logged into the root account.

   Start the server license daemon by entering the following command:

   shell> <install_dir>/flexlm_distr/lmgrd -c $NGLD_LICENSE_FILE -l /usr/tmp/

   lmgrd_ngld.log &

In the above command, the -l switch specifies a destination for the FlexLM log file, and the -c switch

specifies that your license file will be used.

Note: If you see the message "Vendor daemon can't talk to lmgrd (cannot read data) - FlexLM error" when you attempt to start the license daemon, see Troubleshooting Sec. 1.3.3.

Use the following command to check that the Silvaco license daemon is running and that the correct number of licenses is available:

shell> <install_dir>/flexlm_distr/lmutil lmstat -a

You should see a message like the following. No errors should be reported.

lmutil - Copyright (C) 1989-2016 Flexera Software LLC. All Rights Reserved.

Flexible License Manager status on Mon 1/18/2024 11:36

License server status: port_number@host_name

License file(s) on servername: full_license_file_path

servername: license server UP (MASTER) v11.14.1

Vendor daemon status (on servername):

ngld: UP v11.14.1

Feature usage info:

Users of toolname: (Total of "n "licenses available)

If you have installation or licensing problems, refer to Troubleshooting Sec. 1.3.3.

4. End user environment setup

Users of Silvaco Cello must have the NGLD_LICENSE_FILE variable configured, pointing to

port@hostname where the license server daemon is running.

5. GDSII layout editor license installation

Files used for Linux systems are contained in directory <install_dir>/slam/bin. To set up your

GDSII Editor license server for either Linux or Sun Solaris systems:

- Copy and paste the emailed licensing key information or enter the information from the email into a license.dat file. The license file can be saved anywhere.

- Set environment variable NAN_LICENSE_FILE to point to the local copy of the license.dat file,

using one of the options below.

- From a C shell:

shell> setenv NAN_LICENSE_FILE path_to_license_file

- From other shells:

shell> **export** NAN_LICENSE_FILE=path_to_license_file

- Verify the path to your license file by entering the following at the shell prompt:

shell> **echo** $NAN_LICENSE_FILE

Set NAN_LICENSE_FILE to start automatically when you log in by including the environment variables in your shell startup script (.bashrc, .cshrc, .kshrc, or .profile).

6. Start the license server.

Starting the server license manager daemon automatically starts the Silvaco license daemon. To prevent security violations, make sure you are not logged into the root account.

- Start the server license daemon by entering the following command:

shell> <install_dir>/slam/bin/NGGDSIIEditLD &

After issuing the above command, you should see the following messages on the terminal:

NGGDSIIEditLD Version 3.0.0 Q1Y05 production

*** Portions Copyright 1997 – 2025 by Silvaco

License usage summary interval: 12 hours.

Using license key file foo.key.

NGGDSIIEditLD ready to serve licenses for:

        NGGDSIIEditCore 40 licenses

        NGGDSIIEditView 40 licenses

        NGGDSIIEdit 40 licenses

        physout 40 licenses

        schematic 40 licenses

        NGGDSIIEditXTK 40 licenses

        HDLIN 40 licenses

        HDLOUT 40 licenses

        slam-drc 4 licenses

Once started, the license server will continue to operate until the machine is shut down. You should start it only once. The license server should not be run under the root account.

After the license server is running, query its status by issuing the command:

shell> <install_dir>/slam/bin/NGGDSIIEditLSStat

This command will query the license server for who is using which features. You can also get a usage summary with:

shell> <install_dir>/slam/bin/NGGDSIIEditLSStat –-totalUsage

7.   End user environment setup.

Users of Silvaco GDSII Editor must have the NAN_LICENSE_FILE variable configured, pointing to port@hostname where the license server daemon is running. Alternatively, the same environment variable can contain the path to the license file.

8.   Troubleshoot license problems.

If you have difficulties installing or licensing your Silvaco product, read this section before contacting Silvaco or your local technical support representative.

If lmstat reports errors, read the log file /usr/tmp/lmgrd_ngld.log. The log file contains information that can help you resolve problems. Repeat the licensing steps as needed.

Some common problems include:

• Typographical errors in the license.dat file.

• An improperly set NGLD_LICENSE_FILE environment variable.

• Multiple Silvaco license manager daemons (lmgrd) executing. In this case, use one of the following commands to list the lmgrd processes, kill the older process, and try again.

    shell> **ps** -ef | grep lmgrd

    or

    shell> **ps** -auxw | grep lmgrd

    When contacting Silvaco Customer Support regarding license issues, include the following:

• A copy of your license.dat file.

• A support.log file. Create the file using these commands:

    % **echo** $NGLD_LICENSE_FILE > support.log

    % **cat** /usr/tmp/lmgrd_ngld.log >> support.log

% **ps** -ef | grep lmgrd >> support.log

% <install_dir>/flexlm/bin/<architecture>/lmutil lmstat -a >> support.log

Based on your system environment, you might need to use the ps -auxw command instead of the ps -ef command; the rest of the command line remains the same.

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Installation of Viola

Installation of Viola baseline package is the same as for the Silvaco software. The licensing installation and setup are different.

Silvaco's Cello, Liberty Analyzer, and Viola products all use FlexLM based licensing and they can all be provided in the same software license key.

This section gives detailed instructions for setting up a FlexLM-based license server. Consult your system administrator if you are not familiar with Unix setup commands.

The following list summarizes the detailed instructions:

• Update the SERVER and VENDOR lines in the license.dat file.

• Verify that the host name and HostID are correct.

• Start the server license manager daemon.

• Verify that the Silvaco license daemon is running, and that the authorization is correct using the lmstat utility.

1. Set the license variable.

To pass information about the Silvaco license file, create the following entry in file Install.cfg in directory <install dir>/etc/:

NGLD_LICENSE_FILE=<license file>

Or, if you are using Simucad license:

SIMUCAD_LICENSE_FILE=<license file>

The file uses /bin/sh syntax (variable=value).

This variable points to the Silvaco license file in standard FlexLM LM_LICENSE_FILE variable format. For details, refer to FlexLM documentation.

2. Set up the license server

To set up your license server:

- Copy and paste the licensing key you received from Silvaco or enter the information from it into a license.dat file. The license file can be saved anywhere. When you enter the information:

- Update the SERVER line in the license.dat file with the host name of your server. The syntax of a SERVER line entry is:

SERVER host_name host_id 1710

where host_name is the host name of your license server.

- To verify that the HostID is correct, enter the following command to display the server's HostID:

shell> <install_dir>/flexlm_distr/lmutil lmhostid

- Update the DAEMON line in license.dat to the full path for the Silvaco license daemon (ngld):

VENDOR ngld <install_dir>/flexlm_distr/ngld

4. Set the NGLD_LICENSE_FILE environment variable to point to the local copy of the license.dat file using one of the options below.

From a C shell:

shell> setenv NGLD_LICENSE_FILE path_to_license_file

From other shells:

shell> NGLD_LICENSE_FILE=path_to_license_file

shell> export NGLD_LICENSE_FILE

5. Verify the path to your license file by entering the following at the shell prompt:

shell> echo $NGLD_LICENSE_FILE

- Set your NGLD_LICENSE_FILE to start automatically when you log in by setting the NGLD_LICENSE_FILE environment variable in your shell startup script (.bashrc, .cshrc, .kshrc, or .profile file).

6. Start the license manager.

Starting the server license manager daemon automatically starts the license daemon. To prevent security violations, make sure you are not logged into the root account.

- Start the server license daemon by entering the following command:

shell> <install_dir>/flexlm_distr/lmgrd -c $NGLD_LICENSE_FILE -l /usr/tmp/lmgrd_ngld.log &

In the above command, the -l switch specifies a destination for the FlexLM log file, and the -c switch specifies that your license file will be used.

Note: If you see the message "Vendor daemon can't talk to lmgrd (cannot read data) - FlexLM error" when you attempt to start the license daemon, see Troubleshooting section 3.5.

- Use the following command to check that the license daemon is running and that the correct number of licenses is available:

shell> <install_dir>/flexlm_distr/lmutil lmstat -a

You should see a message like the following. No errors should be reported.

lmutil - Copyright (C) 1989-2016 Flexera Software LLC. All Rights Reserved.

Flexible License Manager status on Mon 1/18/2024 11:36

License server status: port_number@host_name

License file(s) on servername: full_license_file_path

servername: license server UP (MASTER) v11.14.1

Vendor daemon status (on servername):

ngld: UP v11.14.1

Feature usage info:

Users of toolname: (Total of n licenses available)

- If you have installation or licensing problems, refer to Troubleshooting License Problems on Section 3.5.

7. End user environment setup.

    End users must have the NGLD_LICENSE_FILE variable configured, pointing to port@hostname where the license server daemon is running.

8. Troubleshoot license problems.

    If you have difficulties installing or licensing your Silvaco product, read this section before contacting Silvaco or your local technical support representative.

    If lmstat reports errors, read the log file /usr/tmp/lmgrd_ngld.log. The log file contains information that can help you resolve problems. Repeat the licensing steps as needed. Some common problems include the following:

    • Typographical errors in the license.dat file.

    • An improperly set NGLD_LICENSE_FILE environment variable.

    • Multiple Silvaco license manager daemons (lmgrd) executing. In this case, use one of the following commands to list the lmgrd processes, kill the older process, and try again.

shell> ps -ef | grep lmgrd

or

shell> ps -auxw | grep lmgrd

When contacting Silvaco Customer Support regarding license issues, include the following:

• A copy of your license.dat file.

• A support.log file. Create the file using these commands:

% echo $NGLD_LICENSE_FILE > support.log

% ps -ef | grep lmgrd >> support.log

% ps -ef | grep ngld >> support.log

% <install_dir>/flexlm_distr/lmutil lmstat -a >> support.log

Based on your system environment, you might need to use the ps -auxw command instead of the ps -ef command; the rest of the command line remains the same.

Installation of PEX Certify

A .bin package can be downloaded from the Download section of the Silvaco website (Resources > Download > Software Request). Once approved for download, a link to the download site will be emailed to you. The download will also be available on the Silvaco website (Resources > Download > My Personal Downloads). Click the "Download" button to save the package.

1.   Retrieve the AAAA-pexcertify-BBBB-C-D-E-rh64.bin tree (e.g, 21473-pexcertify-2024-1-164-R-rh64.ssu) and copy it under a directory of your choice (e.g., /tools/vendors/Silvaco). Make sure the copied binary file has executable permissions.

2.   Execute the binary file to begin the installation process. Follow the prompts and directions provided by the installer to proceed with the installation. Note: Ignore any message prompting you to use root privileges during the installation process.

3.   Set the PEXCERTIFY_ROOT environment variable so that it points to the "/x86_64-linux/" directory.   For   example: setenv   PEXCERTIFY_ROOT /tools/vendors/Silvaco/lib/pexcertify/<W.X.Y.Z>/x86_64-linux/

4.   Update the PATH environment variable so that it includes the folder: $PEXCERTIFY_ROOT/bin. For example: setenv PATH $PEXCERTIFY_ROOT/bin:$PATH

5. PEX Certify is installed. Run the following command from a terminal to confirm the version:

6. pexcertify -version

7. Set the LM_LICENSE_FILE environment variable so that it points to the license file delivered.

A .ssu package is an update (where a .bin is a baseline).
Note: there is no need to install a .bin before a .ssu.

Installation of PEX Certify(.SSU)

A .ssu package can be requested on your behalf by Silvaco FAE. Once approved for download, a link to the download site will be emailed to you. The download will also be available on the Silvaco website (Resources > Download > My Personal Downloads). Click the "Download" button to save the package.

1. Retrieve the AAAA-pexcertify-BBBB-C-D-E-rh64.ssu tree (e.g, 21473-pexcertify-2024-1-164-R-rh64.ssu) and copy it under a directory of your choice (e.g., /tools/vendors/Silvaco).

2. Run the following command "tar -xzf" on the .ssu file. It will lead to an <installation_path>/lib/pexcertify<W.X.Y.Z>/x86_64-linux/ set of directories.

3. Set the PEXCERTIFY_ROOT environment variable so that it points to the "/x86_64-linux/" directory. For example: setenv PEXCERTIFY_ROOT /tools/vendors/Silvaco/lib/pexcertify/<W.X.Y.Z>/x86_64-linux/

4. Update the PATH environment variable so that it includes the folder: $PEXCERTIFY_ROOT/bin. For example: setenv PATH $PEXCERTIFY_ROOT/bin:$PATH

5. PEX Certify is now installed. Run the following command from a terminal to verify the version: pexcertify -version

6. Set the LM_LICENSE_FILE environment variable so that it points to the license file delivered.

Installation of Visolyze

A .bin package can be downloaded from the Download section of the Silvaco website (Resources > Download > Software Request). Once approved for download, a link to the download site will be emailed to you. The download will also be available on the Silvaco website (Resources > Download > My Personal Downloads). Click the "Download" button to save the package.

1. Retrieve the AAAA-visolyze-BBBB-C-D-E-rh64.bin tree (e.g: 21473-visolyze-2024-1-164-R-rh64.ssu) and copy it under a directory of your choice (e.g., /tools/vendors/Silvaco). Make sure the copied binary file has executable permissions.

2.   Execute the binary file to begin the installation process. Follow the prompts and directions provided by the installer to proceed with the installation. Note: Ignore any message prompting you to use root privileges during the installation process.

3.   Set the VISOLYZE_ROOT environment variable so that it points to the "/x86_64-linux/" directory.   For   example: setenv   VISOLYZE_ROOT /tools/vendors/Silvaco/lib/visolyze/<W.X.Y.Z>/x86_64-linux/

4.   Update the PATH environment variable so that it includes the folder: $VISOLYZE_ROOT/bin. For example: setenv PATH $VISOLYZE_ROOT/bin:$PATH

5.   Visolyze is now installed. Run the following command from a terminal to verify the version: visolyze -version

6.   Set the LM_LICENSE_FILE environment variable so that it points to the license file delivered.

A .ssu package is an update (where a .bin is a baseline).
Note: there is no need to install a .bin before a .ssu.

Installation of Visolyze (.SSU)

A .ssu package can be requested on your behalf by Silvaco FAE. Once approved for download, a link to the download site will be emailed to you. The download will also be available on the Silvaco website (Resources > Download > My Personal Downloads). Click the "Download" button to save the package.

1. Retrieve the AAAA-visolyze-BBBB-C-D-E-rh64.ssu tree (e.g, 21473-visolyze-2024-1-164-R-rh64.ssu) and copy it under a directory of your choice (e.g.: /tools/vendors/Silvaco).

2. Run the following command "tar -xzf" on the .ssu file. It will lead to an <installation_path>/lib/visolyze/<W.X.Y.Z>/x86_64-linux/ set of directories.

3. Set the VISOLYZE_ROOT environment variable so that it points to the "/x86_64-linux/" directory. For example: setenv VISOLYZE_ROOT /tools/vendors/Silvaco/lib/visolyze/<W.X.Y.Z>/x86_64-linux/

4. Update the PATH environment variable so that it includes the folder: $VISOLYZE_ROOT/bin. For example: setenv PATH $VISOLYZE_ROOT/bin:$PATH

5. Visolyze is now installed. Run the following command from a terminal to verify the version: visolyze -version

6. Set the LM_LICENSE_FILE environment variable so that it points to the license file delivered.

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FAQ

Q1: How to report the environment in which an issue or error occurs?
A1: Sometimes Silvaco will request a Silvaco Report to help with any software issues you may have.
This can be generated by users by following the instructions below:

1. Open SMAN (Management Console)
    *Start sman by entering 'sman' in terminal or console.
    If you get an error such as "Command not found", enter the full path.
    e.g., Installation directory: /opt/sedatools (Linux)
        /opt/sedatools/bin/sman
            Installation directory: c:\sedatools (Windows)
            c:\sedatools\exe\sman.exe

    *Start sman by clicking a desktop shortcut: 'SMAN' or 'Management Console'.

2. Click 'File' and select 'New Report'.
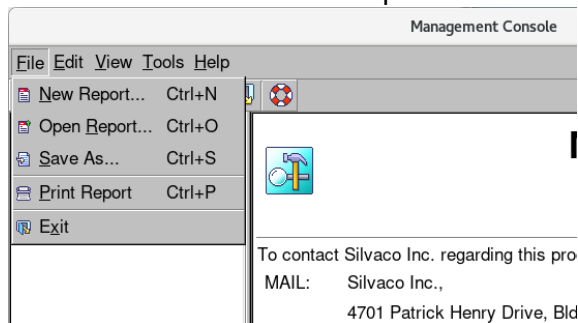
3. Save the report to the file(*.rpt) by clicking the 'Save' button.
    * You can see the report file by clicking the 'Details' button before clicking 'Save'.
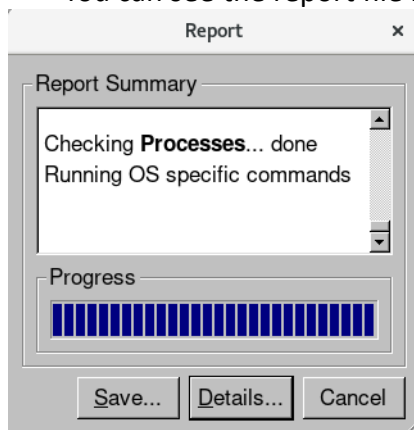
Q2: How to get the log files in SFLM?
A2: You can get SFLM usage logs (Yearly, Monthly, Daily) in SFLM Logging Directory.
1. Open SFLM License Management Web in License server.
        http://<license_server>:3162

2. Click 'Customize Logging' in 'Admin' in the left menu.

3. Enter the password for the SFLM admin login.

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4. Select Item/level in 'License Usage Logging Mode'.
   **Recommend Item/level is 'AllLoging'
   **You can select the output directories (SFLM Logging Directory), but it is recommended not to change the default.

5. Click 'Save Changes'

Q3: How to load/renew (update) license file in the SFLM license server?
A3: You can load/renew a license file as follows:
   1. Open SFLM License Management Web in the license server.
      http://<license_server>:3162

   2. Click 'Install New License(s)'.

   3. Enter SFLM admin password.

   4 . Click 'Automatic Update', or 'Install Saved File'.
      If you are using a browser that can access the internet, click 'Automatic Update' (recommend).
      If you are using a browser that can't access the internet and you have a correct license file, click 'Install Saved File'.

Q4: How to get the active license status in SFLM License Server?
A4: You can check the active license status as follows:
   1. Open SFLM License Management Web in the license server.
      http://<license_server>:3162
   2. Click 'Show Valid License(s)'.

Q5: How to get the usage status in SFLM License Server?
A5: You can check the license status as follows:
   1. Open SFLM License Management Web in the license server.
      http://<license_server>:3162
   2. Click 'Show Valid License(s)'.

Q6: How to reset the admin password for SFLM?
A6: Run `sflm -stop`, then `sflm -set-password`, followed by `sflm -start` on the machine where SFLM was originally installed.

Q7: Can't get a license from SFLM License Server, what is the cause and how to fix it?
A7: Possible causes are as follows.
   The license file is not installed.
   1. Open license server web interface:
      http://<License Server>:3162
   2. Check that the correct license file name is displayed in "License Files:" at the bottom of the

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page.

License file is not valid.
Check whether the machine ID in the license file and the license file displayed on the SFLM license server web interface are the same.

MachineID is no longer valid.
1. Open license server web interface.
http://<License Server>:3162

2. Check if the error "MachineID is disabled" is displayed on 'Home' of the SFLM web interface.

Firewall blocks licensing communication.
See 'Q8: Communication Error has occurred and operation is not working properly. What is the cause and how to fix it?'

Q8: A communication error has occurred, and the license server is not operating properly. What is the cause and how to fix it?
A8: Make sure the following ports are open in the firewall:
3162/TCP - SFLM server port, required by the SFLM license server.
2809/TCP- SIPC (CORBA standard naming service) port, this is required for interprocess communication.
3162/TCP - SFLM server port, required by the SFLM license server.
31620/TCP - SFLM monitor port, required to allow the communication between the applications and the license server.
3050/TCP – Firebird database server port, required by Firebird database server. UTMOST 4 uses this port to communicate with the database.
In the FlexLM license file, the number at the end of the SERVER line is the port number the FlexLM server runs on, this can be changed to any available number.
For more details regarding firewall settings, see the '**Q10:How to configure Firewall settings?**' section in this guide.

Q9: A storage space issue is preventing installation.
A9: During the installation of your .bin file the installer utilizes the /tmp partition of the local machine.
If this partition is not large enough (> 5Gig) you will receive a message similar to the one below:

Preparing to install

WARNING: /tmp does not have enough disk space! Attempting to use // for install base and tmp dir.

Extracting the JRE from the installer archive...

Unpacking the JRE...

Extracting the installation resources from the installer archive...

The size of the extracted files to be installed are corrupted. Please try to download the installer again

and make sure that you download using 'binary' mode. Please

do not attempt to install this currently downloaded copy.

If you receive this message, you should identify another disk partition with more disk space and use the below environment variable to point the installer to that directory:
export IATEMPDIR="*directory*"
where *directory* is a directory with enough file space for temporary use.

Q10: How to configure firewall settings?
A10: Allow access to a port by doing the following:

Linux Standard Firewall (firewall):

1. Check the firewall status

```
sudo firewall-cmd --state
```

If the firewall is not active, it is not necessary to do the following steps.

2. Check the zone for target network

```
sudo firewall-cmd --get-active-zones
```

3. Allow access to the desired port number in the appropriate zone(public)
   sudo firewall-cmd --zone=public --add-port=< desired port number> --permanent

   e.g., SFLM License Server(3162/tcp)

```
sudo firewall-cmd --zone=public --add-port=3162/tcp --permanent
```

4. Reload the firewall to apply the changes

```
sudo firewall-cmd –reload
```

5. Confirm the added rule
   sudo firewall-cmd --zone=<zone> --list-ports
   For example, check the allowed ports in the public zone:

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```
sudo firewall-cmd --zone=public --list-ports
```

Windows standard firewall (Defender):

1. Open PowerShell with Admin rights.
   Refer to 'Q11: How to Open PowerShell with Admin rights?'

2. Create a new inbound rule
   Run the firewall configure command (New > NetFirewallRule) for allowing the desired port.
   New-NetFirewallRule -DisplayName <Service Name> -Direction Inbound
   -LocalPort <desired port number> -Protocol TCP
   -Action Allow -Profile Public

```
New-NetFirewallRule -DisplayName "SFLM Server" -Direction Inbound -LocalPort 3162 -Protocol TCP -Action Allow -Profile Public
```

e.g., SFLM Server (Port Number: 3162/tcp)

3. Verify the rule

```
Get-NetFirewallRule | Where-Object DisplayName -like "SFLM Server"
```

FlexLM with Firewall
Edit License file before allow access to a port in the Linux Standard Firewall (firewall):

1. Decide the port number for vendor deamon(simucad/ngld)
   By default, vendor daemon port numbers are automatically assigned from unused ports by lmgrd (FlexLM). However, if you have a firewall enabled, you must assign a unique number to the port. You can assign a number by adding "port=<unique number>" to the vendor/daemon line in license file.
   For example, vendor daemon name is "simucad", desired number is **27001**:
   Modify license file.

```
SERVER    server1.silvaco.com    00e59078086 27000
daemon simucad   /opt/sedatools/flexlm/11.16.2.R/x86_64-linux/simucad port=27001

#License
FEATURE A_Silvaco_Apps simucad xxxxxx-dec-2099 X 99F8B24D0X6E3
:
```

2.Update Flexlm settings

```
/opt/sedatools/bin/lmreread -c /opt/sedatools/license/license.lic
```

3.Register the lmgrd and vendor daemon ports to the firewall using the method described above.

Q11: How to open PowerShell with Admin rights (Windows)?

A11: You can open PowerShell with Admin rights as follows:
Enter "⊞"(Windows Key) + "x" key and click "**Windows PowerShell (Admin)**"in the menu.
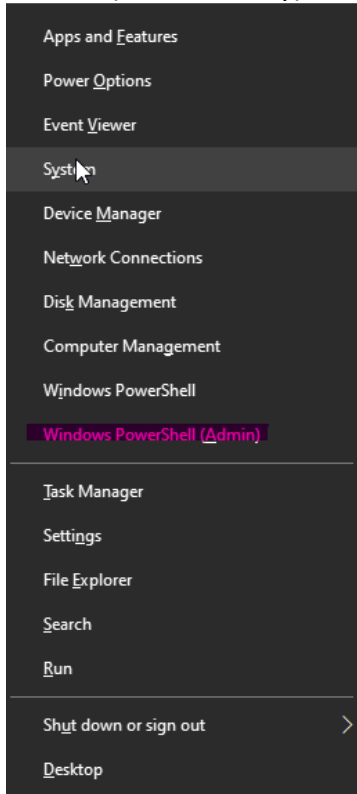
FlexLM Utility Commands FAQ

Q12: How do I check the license usage and server status using lmstat?
A12:`**lmstat**` is used to monitor license usage and server status.
Execute `lmstat -a` to display the status of all license servers and details about licenses in use.
Example: Run `lmstat -c <path to your license file> -a` for details on a specific license file.

Q13: What is the process for stopping a license server using lmdown?
A13:`**lmdown**` properly shuts down the license server.
Typically, it's recommended to use server management tools to stop the server.
To stop a server for a specific license file, use `lmdown -c <path to your license_file>`.

In a case when other third party FlexLM services are running and there is a need to stop a service,
run the following command: `lmdown -c license_file -vendor vendorname`

Q14: How do I start the license server using lmstart?
A14: `**lmstart**` starts the license server.
This command is generally part of an automatic process during system boot, rather than being used directly.
Example: For manual restarts, if necessary, use server management tools.

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Q15: What is lmutil and how is it used?

A15: `**lmutil**` is a versatile command for a variety of license-related operations.

    Follow `lmutil` with the desired sub-command (e.g., lmstat, lmdown).

    Example: Execute `lmutil lmstat -a` to run `lmstat` through `lmutil`.

Q16: How do I reload the license file after updates using lmreread?

A16: `**lmreread**` applies changes to the license server when the license file is modified or updated.

    Use `lmreread -c [path to your license file]`.

    Example: After updating the license file, execute `lmreread -c <license install directory>/<license filename>` to reflect the changes.

Q17: How to show the HostID?

A17: `**lmhostid**' shows the HostID for the FlexLM license server, and in most cases the HostID is same as the MAC address of the ethernet cards.

Example: Execute 'lmhostid -n'.

Q18: How to set up automatic startup via systemd Linux service?

A18: Create a unit file in systemd.

1. Edit the unit file:
   - Open a new file: "/etc/systemd/system/flexlm.service" using a text editor (e.g., nano, vim, or gedit).
   - Add the followings to the file: (e.g., install directory is /opt/sedatools, license file path is /opt/licenses/license.dat, license administrator user is lmuser)
   - Save and close the file.
2. Set Correct Permissions:

```
[Unit]
    Description=FlexLM Service

[Service]
    Type=simple
    ExecStart=/opt/sedatools/bin/lmgrd -c /opt/licenses/license.dat -l /var/log/flexlm.log
    ExecReload=/opt/sedatools/bin/lmutil lmreread -c /opt/licenses/license.dat
    ExecStop=${lm_instdir}/lmutil lmgstop -c /opt/licenses/license.dat
    User=lmuser

[Install]
    WantedBy=default.target
```

   - Ensure the unit file has the correct permissions:
   - sudo chmod 664 /etc/systemd/system/flexlm.service
3. Reload system:
   - After creating or modifying a unit file, reload systemd to make it aware of the changes:

     sudo systemctl daemon-reload

Q19: How to set up automatic startup via /etc/rc.local Linux service?

A19: Add FlexLM startup script to /etc/rc.local

    1. Edit the Unit File:

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      o   Open a file: "/etc/rc.local" using a text editor (e.g., nano, vim, or gedit).

      o   Add the following sections to the file: (e.g., install directory is /opt/sedatools, license file path is /opt/licenses/license.dat, license administrator user is lmuser)

```
su -u lmuser /opt/sedatools/bin/lmgrd -c /opt/licenses/license.dat -l /var/log/flexlm
```

SFLM Utility Command FAQ

Q19: How do I display the installed versions of SFLM?
A19: **'sflm -WV'** shows the default version of SFLM server.
    Example: Execute 'sflm -WV' on the terminal.

Q20: How do I display the versions of SFLM installed?
A20: **'sflm -WVs'** shows the installed versions of SFLM server.
    Example: Execute 'sflm -WVs' on the terminal.

Q21: How do I stop the SFLM server?
A21: **'sflm -stop'** stops SFLM license server.
    Example: Execute 'sflm -stop' on the terminal.

Q22: How do I start the SFLM server?
A22: **'sflm -start'** starts SFLM license server.
    Example: Execute 'sflm -start' on the terminal.

Q23: How do I show valid licenses?
A23: **'sflm -status'** shows 'valid license'.
Example: Execute 'sflm -status' on the terminal.

Q24: How do I show license usage?
A24: **'sflm -users'** shows 'license usage'.
    Example: Execute 'sflm -stop' on the terminal.

Q25: How do I display the MachineID?
A25: **'showid'** shows MachineID.
    IDs starting with '0SSMID' are IDs that can be used as license servers.
    If it is not displayed, the machine is **unregistered,** or the ID has been disabled due to a change in the machine's status.

Q26: How to verify if the downloaded file is correct?"
A26: You can verify if a downloaded file is correct by comparing the checksum of the downloaded file with the checksum listed on the download page.
When you click on the file name of the download target in "My downloads", the details of the file are displayed, and the **checksum** is listed in it.

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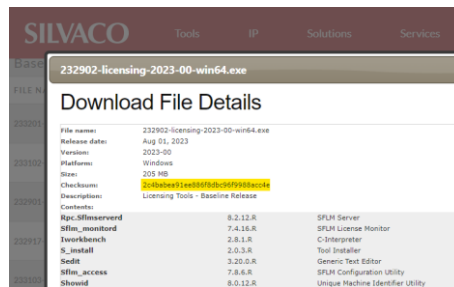
And you can get the checksum of the downloaded file by followings,

Windows:(On the Windows Powershell)
Get-Filehash -Algorithm md5 *<downloaded file name>*

Linux:(On the Terminal)
openssl md5 *<downloaded file name>*

Q27: How to set up SFLM to autostart on boot (using systemd unit file).
A27: Create a unit file in systemd.
1. Open the file: "/etc/systemd/system/sflm.service" using a text editor (e.g., nano, vim, or gedit).
2. Add the following to the file:

```
[Unit]
   Description=SFLM
   After=network.service
[Service]
   Type=simple
   ExecStart=/opt/sedatools/bin/sflm -start
   ExecReload=/opt/seadtools/bin/sflm -start
   ExecStop=/opt/sedatools/bin/sflm -stop
   RemainAfterExit=yes
[Install]
   WantedBy=default.target
```

3. Ensure the unit file has the correct permissions:
   sudo chmod 664 /etc/systemd/system/sflm.service
4. Reload systemd:
After creating or modifying a unit file, reload systemd to make it aware of the changes:
       sudo systemctl daemon-reload

Q28: How to set up automatic startup of SFLM service using rc.local.
A28: To set up SFLM service to boot on start use the following:

In case you want to use /etc/rc.local, open a file: "/etc/rc.local" using a text editor (e.g., nano, vim, or gedit) and add the following line to /etc/rc.local:

```
<install_dir>/sflm -start > /dev/null 2>&1
```

Q29: How to migrate to FlexLM from SFLM

A29: Setup FlexLM and uninstall SFLM in following steps

1. Download the license server package.
2. Install the license server package.
3. Setup FlexLM
   o See FlexLM Licensing Server in License Server Setup
4. Check the license status:
   o For Linux:
      ▪ Run <installation_directory>/bin/lmutil lmstat -c <full_path_to_license_file> -a.
   o For Windows:
      ▪ Run <installation_directory>\exe\lmutil.exe lmstat -c <full_path_to_license_file> -a.
5. Remove the SFLM server:
   o Once you've confirmed that the license is working correctly in step 4, remove the SFLM server.
   o For Linux (execute as root user):
      ▪ Run <installation_directory>/bin/sflm -deinstall.
   o For Windows (run in Administrator PowerShell):
      ▪ Execute <installation_directory>\exe\sflm.exe -deinstall.

Set FlexLM Settings to User environment. Connecting to a remote Flexlm licensing server from the application machine.

Set the following in. bashrc for each user

        export SFLM_FLEXLM=1
        export SIMUCAD_LICENSE_FILE=<port_number>@<license_server_host_name>

NOTE: Licensing software must be installed on both machines in case of remote access to the license server from the application server. Additionally, make sure that ~/.flexlmrc file is adjusted for the license server.

e.g., license server port is 27000, hostname is license_server1

```
export SFLM_FLEXLM=1
export SIMUCAD_LICENSE_FILE=27000@ license_server1
```

Q30. How to choose multiple license servers for a specific user.

A30. If the network contains multiple license servers, you can change the SFLM_SERVERS environment variable to access all of them. For instance, on Unix C-shell:

setenv SFLM_SERVERS "MachineA MachineB MachineC"

The application in this case will first attempt to get a license from machineA. If it fails, it will try machineB and finally try machineC.

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Note: 1. It is important that space exists only between machine names. No space is allowed within one machine's name.

2. Each machine has a full SFLM installation, which is stand alone. This is not a redundant server setup.

3. All the servers need to undergo the Registration process.

Q31. How to combine two FlexLM license files with the same host ID.

A31. In case there is a need to combine license features from one license file with another license to use all the features in both files, it is important that both license files must have the same host ID. You can copy features from a needed license and paste them under the features of your current license. Before creating a combined license file, the license service must be stopped with lmdown command and started again with a newly combined license file.

Licensing Daemon Changes for FlexLM
Silvaco provides a FlexNet-compatible license file for the products purchased, the necessary binaries, and the edxactd daemon to run the license system.

Starting with version 2024.1 baselines of the following software, it is required to issue a new license (simucad daemon) to move to the new licensing system. Here is a comparison table of changes below:

Product	Product Versions	Daemon	FlexNet Version
JivaroA (EOL)	5.9.28 and before	edxactd	11.13.1
JivaroD (EOL)	5.9.98 and before		
Jivaro	2024.1.29 and before		
Belledonne	2022.2.36 and before		
Brenner	2022.2.36 and before		
Viso	2024.1.74 and before		
PEX Diff	2024.1.74 and before		
PEX Link	2024.1.74 and before		
Jivaro	after 2024.1.29	simucad	11.19.2
Viso	after 2024.1.74		
PEX Diff	after 2024.1.74		
PEX Link	after 2024.1.74		

To use the latest software with a simucad daemon, the latest version of FleXLM needs to be installed. The current license server should be stopped (using lmdown command), and the new one installed.

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