

# Synopsys Common Licensing Combined Vendor Daemon Best Practices Checklist

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## 1. Overview

Read this document before installing the SCL combined vendor daemon release. This document has the following sections. You should review all sections before moving to the SCL Combined Vendor Daemon (CVD) release.

- Important items to consider when planning your installation
- Hardware and Operating System Requirements
- Requirements for starting the CVD
- Legacy Application Compatibility

It is strongly recommend that all Synopsys customers use Synopsys Common Licensing (SCL) version 11.1.

## 2. Important items to consider when planning your installation

During the installation of the SCL CVD release you may have a period of time where some of your servers are running the snpslmd CVD while other servers remain on a legacy Synopsys daemon such as avantd, tmaid, synplctyd and so on.

However, as applications expect to have daemons of the same type in the license search path, there are a couple of issues which must be considered when creating your license server installation plan.

## Pooling Functionality

Pooling is the ability of an application to check out licenses from two or more servers (daemons) at the same time, and should not be confused with license WAN functionality.

**Applications which are capable of pooling will not pool between servers running different daemons, even if both servers are in the license search path.**

For example: Assume that you have multiple license servers, using different legacy daemon (such as snpslmd 8.4 and avantd 7.2). If you change some but not all of the servers to the CVD (snpslmd 11.6.1.x), then the pooling of licenses between servers on different daemons can no longer occur. Hence applications might have limited licenses during the process of installation.

**Note:** Pooling is not supported by all Synopsys applications, though virtually all 2009.12 applications do support pooling. For a complete list of tools that have pooling functionality please contact the Synopsys Support Center.

## Roll-over Functionality

**Applications will not roll over between the snpslmd CVD and a legacy Synopsys license daemon if the current (connected) daemon goes down, even if both servers are in the license search path.**

The roll-over functionality allows the application to check out the license from the next daemon in its search path if the current connected daemon goes down. This should not be confused with license WAN or Pooling functionalities.

**Please note:** If you have any pooling or rollover problems once you have installed CVD, set the environment variable "SNPSLMD\_DAEMON OFF". This variable tells Synopsys "bridge" applications to communicate with the CVD server via legacy daemon code.

## 3. Hardware, Operating System and Other Requirements

### Platform Requirements

If you currently using a Solaris SPARC server as your license server and are satisfied with its performance as the license server, you do not need to make any changes. If you are a new Synopsys customer or are migrating a new license server, we recommend that you use an AMD or an Intel processor with the Red Hat Enterprise Linux version 4 or 5 operating system (OS). The SCL amd64 platform binary supports both AMD and Intel x86\_64 processors. The following hardware platform is recommended:

- AMD or Intel x86\_64 hardware running Red Hat Enterprise Linux version 4 or 5
- A CPU speed of 2 GHz or better
- Dual or multiple CPU machine or multiple cores (This allows the lmgrd and the snpslmd processes to run on separate CPUs.)
- 4 GB of memory
- 1 GBps Ethernet card and 1 GBps or better network switch

If you are serving large license quantities (more than 300), make sure that you meet these requirements. In addition, do not host more than 2,000 licenses on a single machine or you might see license failures because of the load on the server machine.

**Please Note:** Certain other OS platforms are supported, but are recommended only for small quantities of licenses. For a list of supported platforms, see

<http://www.synopsys.com/Support/Licensing/SupportPlatform/ReleaseSupport/>

If you do not meet these requirements or plan to host the license server on any other OS / platforms, contact the contact Synopsys Support Center at <https://solvnet.synopsys.com/EnterACall>

#### **Hosting a License Server With Other Vendor Daemons**

For optimal license server performance, do not host a Synopsys license daemon with other EDA license daemons on the same machine. If you must share the same machine with other EDA daemons, make sure that you meet the following requirements:

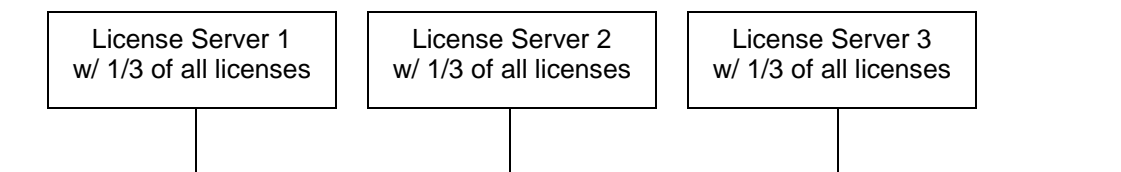
- AMD or Intel x86\_64 hardware running Red Hat Enterprise Linux version 4 or 5
- A CPU speed of 2 GHz or better
- Dual or multiple CPU machine or multiple cores (This allows the lmgrd and the snpslmd processes to run on separate CPUs.)
- 4 GB of memory
- 1 GBps Ethernet card and 1 GBps or better network switch

#### **Single Server Configuration**

A single license server configuration is strongly recommended, as opposed to a redundant (triad) server configuration. The redundant server configuration adds an additional load on the license server and can hinder seamless operation of the license server, eliminating any advantage of redundancy. The Flexera Software (formerly Acresto) FLEXNet components are most robust when the daemons are in a single-server configuration.

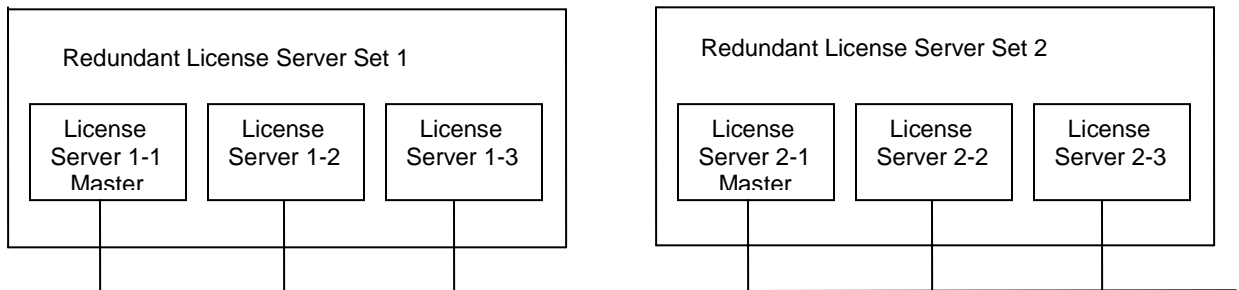
For redundancy, it is recommended that you host multiple single-server configurations. This way, if one of the daemons goes down, only some of the licenses will be unavailable instead of all the licenses in the case of the failure of a redundant configuration (loss of quorum).

See the example below for a single license server configuration below:



The total number of licenses has been split equally amongst all 3 single license servers.

See the example below for a redundant license server configuration below:



#### **Socket Descriptor Limit**

Set the socket descriptor to eight times the actual quantity of licenses served by the license daemon. If your license file has 1024 licenses, set the soft limit of the socket descriptor to 8192. (Depending on the TCP/IP setting on your machine, sometimes it can take longer on the server machine to release the socket resources.)

#### **TCP/IP and Network Settings**

Do not change any TCP settings on the server machine. If you have made any changes to the default settings, the license server might not operate properly.

Make sure that the network card is configured for full duplex communication. In addition, make sure that the network switch is configured for 1-GB data transmission.

Note:

The only required TCP change on Solaris platform is the following (add to `/etc/system`)

```
% /usr/sbin/ndd -set /dev/tcp tcp_time_wait_interval 2400
```

This change is recommended by Flexera Software to ensure that socket connections are released in a timely manner. To make this change permanent, place the previous command in a file called:

```
/etc/init.d/networking-tuning
```

and create a link to that file named:

```
/etc/rc2.d/s99network-tuning
```

#### **WAN License Servers**

Synopsys provides the optional capability to host on a WAN (this applies to situations where the distance between the client and server is greater than 5 miles). You must have a contractual

agreement with Synopsys to host a license server on your global network. If you need this capability, but are not contracted for it, contact your account manager.

If you are planning to host a license server on a wide area network (WAN), there are specific requirements and performance effects you need to consider before doing so.

It is mandatory to have a single-server configuration if you are using the license server over a WAN. A redundant license server configuration will increase the license checkout delays for the application

If the network latency is more than 30 milliseconds between the license server and the client machine, then the end-users will see performance degradation in the application startup. Use the “ping -s” command to see the network latency. It is recommended that the license administrator evaluate whether the performance degradation due to network latency is acceptable to the end-users prior to setting up the WAN servers.

Some applications check out more than one license to complete the job. Depending on the number of licenses checked out by the application, the application might take longer to complete the job. Evaluate all the applications in your WAN to find out whether these delays are acceptable to the end-users.

If you add more than two license servers in your license server search path over a WAN network, you may see increase in performance degradation. Evaluate the performance degradation from pointing to multiple license servers before setting up the WAN servers.

Set up the WAN servers only after evaluating the above considerations.

#### **Compute Farm and License Server**

If you are using a compute farm, make sure that the license server and the compute farm are located within the same subnet. In addition, make sure that the license server meets the Synopsys recommended hardware and OS requirements.

#### **Network Mounted File System**

The license server debug log and report log should be saved on the local disk. If the log files are saved on a network disk, then any glitches to the network file system will impact the license server. In addition, the license software (Imgrd, snpslmd, etc) should be saved on the local disk prior to invoking the server.

## **4. Requirements for starting the combined vendor daemon**

#### **Verify License File Integrity**

Except for allowed modifications to the SERVER and VENDOR lines, or the optional removal of comment lines, the CVD license file must not be edited in any way. Nor should it be merged with other license files, with the exception of temporary license files with the same or subsequent ISSUED date.

It is mandatory to run the "sssverify" utility against the license file before using the file. The sssverify utility validates the integrity of the license file and will detect any errors in the file. Here is a sample output from sssverify utility:

If you use SCL version 11.1:

```
% sssverify <license_file>
```

```
-----  
Integrity check report for license file "license_file".  
Report generated on 31-Oct-2009 (SCL_11.1)  
-----  
Checking the integrity of the license file....  
Valid SSS feature found.  
Siteid: 1001, Server Hostid: a956a4c, Issued on: 10/1/2009  
License file integrity check PASSED.  
-----  
You may now USE this license file to start your license server.  
-----
```

In addition, if the license server log file has SSS related error messages, it indicates that the file is corrupt. It is absolutely necessary to rectify the error messages by invoking the "sssverify" utility. If the problem is not corrected, the license server may behave erratically and users may see random license denials.

Here is a sample message in the server log from a corrupted key file:

```
-----  
12:54:03 (snpslmd) WARNING: SSS errors.  
12:54:03 (snpslmd) Use the sssverify utility to check the integrity of your license file.  
12:54:03 (snpslmd) The license file should be used exactly as received from Synopsys.  
-----
```

To rectify the problem, retrieve the latest key file from SmartKeys Web page at <https://solvnet.synopsys.com/SmartKeys>

If requested, enter your SolvNet user name and password. If the problem persists, contact the Synopsys Support Center.

In order to start the CVD properly, so it can serve clients built on legacy daemons, you must unset the following environment variables if they are set:

- SNPSLMD\_LICENSE\_FILE
- LM\_LICENSE\_FILE
- AVANTD\_LICENSE\_FILE
- NASSD\_LICENSE\_FILE
- SANDWORK\_LICENSE\_FILE
- SYNPLCTYD\_LICENSE\_FILE
- TMLD\_LICENSE\_FILE

When you start the CVD, you should see the following message:

---

23:20:46 (snpslmd) Serving features for the following vendor names: snpslmd adalmd anagram archprod avantd CADABRA chrysalisd EPIC everest hscd innologd ISE-TCADd la\_dmon leda metasoftd nassd numeritchd pdld saber\_dmn sandwork sigmacd slat snpsOEM1 snpsOEM2 snpsOEM3 snpsOEM4 snpsOEM5 snpsOEM6 snpsOEM7 snpsOEM8 snpsOEM9ssilmd synopsysd synplctyd TE\_CATS tmalld vcsd

---

If you do not see this message in the daemon log file, the daemon will not be able to serve keys for secondary vendor daemons (avantd, tmalld, numeritchd and so on). Unsetting the above variables and restarting the server should resolve this problem (add to license server startup script).

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## 5. Legacy application compatibility with the combined vendor daemon

Some legacy versions of Synopsys tools are not compatible with the SCL license server. For example, any application built on FLEXlm 4.x or earlier is not compatible with SCL.

You can locate the FLEXlm (or FLEXnet) version of an application by using the `lmver` utility that is included with SCL. For example, to locate the SpiceExplorer tool version, enter

```
% lmver /synopsys/sandwork/2009.03/platforms/sun4_u5/bin/sx
```

```
lmver - Copyright (c) 1989-2008 Acrecco Software Inc. All Rights Reserved.  
FLEXnet Licensing v10.8.5.3 build 59306 sun4_u7 (liblmgr.a), Copyright (c) 1988-2008  
Macrovision Europe Ltd. and/or Macrovision Corporation. All Rights Reserved.
```

From this example, you can see that the 2009.03 version of SpiceExplorer is based on FLEXNet version 10.8.5.3

The following tools have known compatibility issues with SCL.

- HSPICE and AvanWaves version 2000.4 and earlier are not compatible with the snpslmd vendor daemon.
- Proteus, ProGen, and Prospector version 2004.09-7 and all subsequent releases of 2004.09-x have issues related to license queuing with the SCL license server. A workaround is available when you use these versions with the CVD.
- Synthesis products version 1999.05 and earlier require synopsysd authentication in the key file. Contact your Synopsys Account Manager for assistance.
- Former EPIC products version 5.3 and earlier require EPIC authentication. Contact your Synopsys Account Manager for assistance.
- Vera version 4.0, 4.1(.x), 4.2, and 4.3 require ssilmd authentication in the key file. Contact your Synopsys Account Manager for assistance.

- Apollo version 2003.06-SP1 does not work with the snpslmd vendor daemon. Contact your Synopsys Account Manager for assistance.
- JupiterIO (formerly PIP) versions W-2005.03 and earlier on the Solaris platform will not work with the snpslmd vendor daemon. Contact your Synopsys Account Manager for assistance.

The following table lists additional software and the associated versions that are not compatible with the SCL license server. If you are using any of the versions listed here, contact Synopsys Support Center (<https://solvnet.synopsys.com/EnterACall>) for any questions.

*Table: Product Versions Incompatible With SCL Server version 11.1*

<b>Product</b>	<b>Version incompatible with combined license daemon</b>
Aurora	All versions released earlier than 1999.2 (1999.2 and later versions work with SCL)
Davinci	All versions released earlier than 1999.2 (1999.2 and later work with SCL)
DFM WorkBench	All versions released earlier than 1999.2 (1999.2 and later versions work with SCL)
Medici	All versions released earlier than 1999.2 (1999.2 and later versions work with SCL)
Michelangelo	Not compatible
Proteus (Taurus OPC)	All versions released earlier than 2000.4 (2000.4 and later versions work with SCL)
Raphael	All versions released earlier than 1999.4 (1999.4 and later versions work with SCL)
Raphael NES (RANES)	All versions released earlier than 2002.2 (2002.2 and later versions work with SCL)
Taurus Layout	All versions released earlier than 2002.2 (2002.2 and later versions work with SCL)
Taurus Process / Device [with or without PMEI]	All versions released earlier than 1999.2 (1999.2 & later work with SCL)
Taurus Topography	All versions released earlier than 1999.2 (1999.2 and later versions work with SCL)
Taurus Visual	All versions released earlier than 1999.2 (1999.2 and later versions work with SCL)
Taurus WorkBench	All versions released earlier than 1999.2 (1999.2 and later versions work with SCL)

TSUPREME-3	Not compatible
TSUPREME-4	All versions released earlier than 1999.2 (1999.2 and later versions work with SCL)
Synthesis Tools (Design Compiler, Design Vision, HDL Compiler, DFT Compiler, Design Compiler, FPGA, Library Compiler, Physical Compiler, Power Compiler)	All versions released earlier than 1997.08 (3.1, 3.2, 3.3, 3.4, 3.5, 1997.01)

For the latest information on the Synopsys Common Licensing release, visit the <http://www.synopsys.com/Support/Licensing/Licensing/> webpage.