
Siemens PLM Licensing User Guide

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Table of Contents

Proprietary & Restricted Rights Notices	4
Table of Contents	iii
Siemens PLM Licensing User Guide	3
Siemens PLM Licensing User Guide Disclaimer	3
Overview	4
Fundamentals of Siemens PLM Licensing	5
What Defines Siemens PLM Licensing?	5
License Manager Daemon (lmgrd)	5
Vendor Daemon (ugslmd)	5
License File (splm.lic)	5
Application Program	6
Server Setting	6
The License Request Process	7
License File Format	8
Sample License File	8
SERVER Line	9
VENDOR Line	9
PACKAGE Lines	9
INCREMENT / FEATURE Lines	11
Editable Parameters of the License File	13
Hostname	13
Port Number	13
user_info	14
Types of Individual Licenses	15
Floating / Concurrent Licenses	15
Node-Locked Licenses	15

Mixed Node-Locked and Floating Licenses	15
Packages	16
Siemens PLM Software Suite Bundles	17
Setting Bundles	17
Automatic Bundle Consolidation	18
Bundle Checkout Protocol – Scenario One	18
Bundle Checkout Protocol – Scenario Two.....	18
License Borrowing	19
Borrowing Licenses.....	19
Checking borrowed licenses and expiration dates	19
Determining who borrowed a license.....	19
License Configurations.....	20
Single Server Configuration.....	20
Benefits of a Single Server Configuration.....	20
Setup for Single Server Configuration	21
Standalone Node-Locked Configuration.....	21
Benefits of a Standalone Node-Locked Configuration.....	21
Setup for Standalone Node-Locked Configuration	22
Redundant Server Configuration.....	22
Benefit of a Redundant Server Configuration	23
Considerations	23
Setup for a Redundant Server Configuration.....	24
Effect on the License File	24
Multiple Server Configuration	25
Benefits of a Multiple Server Configuration	25
Considerations for Multiple Server Configuration	25
Setup for Multiple Server Configuration.....	26
Administration Tools	27
Location of Tools	27
Executing Tool Commands.....	28

LMTOOLS for Windows Platforms	29
License Administration on Windows	30
Hardware Key for hostids	30
Installing the Sentinel Hardware Key	30
Installing the WIBU Hardware Key	31
Replacing the License File	31
Stopping the Licensing Service	31
Starting the Licensing Service.....	32
License Administration on Linux	33
Replacing the License File	33
Stopping the License Server.....	33
Starting the License Server	33
License Administration on UNIX	34
Replacing the License File	34
Stopping the License Server.....	34
Starting the License Server	34
License Administration on Mac OS	35
Replacing the License File	35
Stopping the License Server.....	35
Starting the License Server	35
Advanced Siemens PLM Licensing Administration.....	36
Composite Hostid (CID)	37
Licensing Terms	39
Optional Features.....	41
Siemens PLM Licensing Tool.....	41
The Graphical User Interface	42
Bundle Settings	42
Borrowing Settings	43

Environment Settings.....	44
The Command Line Interface.....	45

Siemens PLM Licensing User Guide

Siemens PLM Licensing User Guide Disclaimer

We are providing the **Flexera License Administration Guide** as it was distributed by Flexera Software Incorporated. Information that is in the *Siemens PLM Licensing User Guide* supersedes any information in the Flexera Guide. For example: we don't use LM_LICENSE_FILE, as is indicated in the Flexera manual. Fully supported options are discussed in this guide. These options have been tested by Siemens PLM Software and will be supported. Options that are discussed in the **Flexera License Administration Guide** and are NOT discussed in this guide are not supported. However, since Siemens PLM Software has done nothing to disable these options they may work. Siemens PLM Software has not conducted any testing within our software with these options and will not assist you with their usage.

Warning You should be completely familiar with the information provided in the *Siemens PLM Licensing User Guide* prior to reading the information in Flexera's **License Administration Guide**.

Overview

FlexNet Publisher (FLEX) is a software licensing package that allows a software application to be licensed on a concurrent usage basis, as well as on a per-computer basis. Siemens PLM Licensing is based on FLEX.

Siemens PLM License Server has its own installation. For details on installing and starting Siemens PLM License Server, please refer to the installation guide.

Siemens PLM Licensing features include the following:

1. Operation in a heterogeneous network of supported computer systems.
2. Transparent reconnection of an application when its license server process becomes unavailable, including conditions of license server node failure.
3. Ease of configuration with a single license file per network.
4. Configuration controls for system administrators.
5. Administration tools for system administrators.
6. Independent features definitions.
7. License management on single, redundant and multiple server configurations.

Fundamentals of Siemens PLM Licensing

Siemens PLM Licensing manages licenses in a network and implements the concept of the license server. The license server processes a license request and responds to the client. If a license is available, it is granted and the application is allowed to continue. If not, the application is notified of an error and the application reacts accordingly.

What Defines Siemens PLM Licensing?

Siemens PLM Licensing can be organized into five major components:

1. License Manager Daemon (*lmgrd*)
2. Vendor Daemon (*ugslmd*)
3. License File (*splm.lic*)
4. Application Program
5. Server Setting

License Manager Daemon (*lmgrd*)

The license manager daemon (*lmgrd*) handles the initial contact with the application program, and then passes the connection on to the vendor daemon. The license manager daemon also starts and restarts the vendor daemon.

Vendor Daemon (*ugslmd*)

The vendor daemon (*ugslmd*) keeps track of how many licenses are checked out and who has them. If *ugslmd* terminates for any reason, all users lose their licenses. Users normally regain their licenses automatically when *lmgrd* restarts *ugslmd*.

License File (*splm.lic*)

The license file is a text file that stores the licensing data. The license file (*splm.lic*) must be accessible to each machine designated as a license server. The license file contains all of the site-specific information required by Siemens PLM Licensing. This includes:

1. Server Names
2. Host Identifiers
3. Vendor Daemon Name
4. PACKAGE Information (Optional)
5. INCREMENT / FEATURE Information

Note We recommend that the license file be placed on the license server node only.

Application Program

A software package that uses Siemens PLM Licensing for its license monitoring is usually run from the client. The application program must be able to connect to the *ugslmd* daemon to be issued licenses.

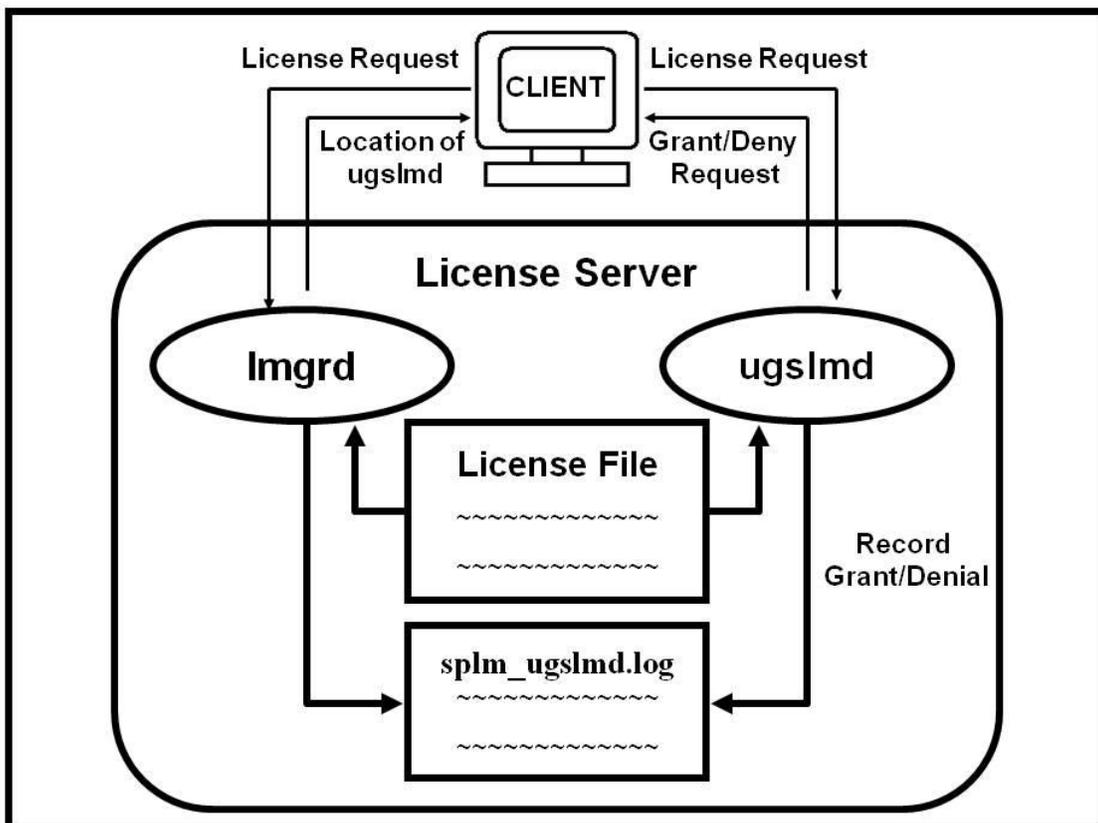
Server Setting

The server setting must be set to run any Siemens PLM Licensing based application. The server setting identifies the license server port (usually 28000) and hostname and is set initially by the installation program when the application is installed. See the applications install guide for information on how to change the server setting after installation.

The License Request Process

The following steps and figure describe how applications interact with the *ugslmd* daemon:

- The application program finds the license server after interpreting the information set in the server setting.
- The application program establishes a connection with *lmgrd* to find the port on which the vendor daemon resides.
- The *lmgrd* daemon determines which port corresponds to *ugslmd* and sends the information back to the client.
- The client proceeds by establishing a connection with *ugslmd* and sends its request for a license.
- The *ugslmd* daemon checks in its memory to determine if any licenses are available and sends either a grant or a denial back to the client.
- The *ugslmd* daemon records the grant or denial of the license request in the debug log file *ugslicensing.log*.
- The license module in the client application grants or denies the use of the feature, as appropriate.



License File Format

The license file is a text file consisting of lines of text that have identifiable names at the beginning of each line (e.g. SERVER, VENDOR, etc.). License files usually begin with a SERVER line (or three lines for redundant servers), followed by the VENDOR line and then one or more INCREMENT / FEATURE lines. In some cases, your license file may contain PACKAGE lines. A back slash (\) is used to continue a line.

Sample License File

The following is a sample of a license file. In this particular example, note the single server configuration, vendor daemon (*ugslmd*), four features, and one suite package. This license file allows the license server *serverA* with the hostid of *COMPOSITE=08002b42b116* to serve 56 floating licenses of the two features (*gateway & cam_base*) and of the bundle (*PACKAGE NX11110*) to any user on the network.

```
# Server line
SERVER serverA COMPOSITE=08002b42b116 28000
# Vendor daemon line
VENDOR ugslmd
# Bundle
PACKAGE NX11110 ugslmd 26.0 \
    COMPONENTS="NX11110_3d_to_2d_flattener NX11110_assemblies \
    NX11110_c_p_p_runtime NX11110_dotnet_runtime NX11110_drafting \
    NX11110_dxf_to_ug NX11110_dxfdwg NX11110_features_modeling \
    NX11110_gateway NX11110_grip_execute NX11110_iges \
    NX11110_nx_freeform_1 NX11110_nx_sheet_metal \
    NX11110_pcf_package_file NX11110_pv_ugdatagenerator \
    NX11110_sla_3d_systems NX11110_solid_modeling \
    NX11110_step_ap203 NX11110_step_ap214 NX11110_ufunc_execute \
    NX11110_ug_collaborate NX11110_ug_kf_checker \
    NX11110_ug_kf_execute NX11110_ug_smart_models \
    NX11110_ug_to_dxf NX11110_ug_web_express \
    NX11110_ugopen_menuscript" OPTIONS=SUITE ck=81 \
    SIGN="1BEC 143A A5FB 9942 E51D EB73 C77B E6DF 5085 \
    8628 2893 D824 8DA1 7F70 1D89 17AA 08D7 E953 F4AB \
    B837 00F2 7BD5 D33F 8A12 AD62 BEAB 2C1B 4D3F 2C55 A291"

INCREMENT NX11110 ugslmd 26.0 permanent 56 \
    SUPERSEDE DUP_GROUP=UHD user_info="NX M-1 Dsgn (FL)" \
    ISSUED=23-aug-2007 ck=91 SIGN="01ED 1ABE 0ED4 853C 4F41 \
    FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 53E8 F2DF 009D \
    602B D7A9 A6A7 8511 77CE 66E1 16E4 DFEF C891 7E7A 0480 \
    9F7C 67AD 7BC9"

# Floating Feature(s)
INCREMENT cam_base ugslmd 26.0 permanent 56 \
    SUPERSEDE DUP_GROUP=UHD user_info="cam_base module" \
    ISSUER="Siemens PLM Software" ISSUED=30-Aug-2007 ck=19 \
    SIGN="11ED 1ABE 0ED4 853C 4F41 602B D7A9 A6A7 8511 77CE \
    66E1 16E4 DFEF C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 \
    68CF B4AA 1DD5 53E8 F2DF 009D 9F7C 67AD 7BC9"
```

```

INCREMENT gateway ugs1md 26.0 permanent 56 \
    SUPERSEDE DUP_GROUP=UHD user_info="gateway module" \
    ISSUER="Siemens PLM Software" ISSUED=30-Aug-2007 ck=179 \
    SIGN="21ED 1ABE C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 \
    68CF B4AA 1DD5 0ED4 853C 4F41 602B D7A9 A6A7 8511 77CE \
    66E1 16E4 DFEF 53E8 F2DF 009D 9F7C 67AD 7BC9"

```

SERVER Line

EXAMPLE :

```
SERVER serverA COMPOSITE=08002b42b116 28000
```

The SERVER line specifies the node name and hostid of the license server and the port number of the license manager daemon. Normally, a license file has one SERVER line. Three SERVER lines indicate that you are using a redundant server configuration. No server line indicates you are using a Standalone Node-Locked license file.

Note

Do not delete SERVER lines from a license file because the hostids from the SERVER lines are encrypted into the signature on every INCREMENT / FEATURE line.

VENDOR Line

EXAMPLE :

```
VENDOR ugs1md
```

The VENDOR line specifies the name of the vendor daemon supported by the license file.

PACKAGE Lines

EXAMPLE :

```

PACKAGE NX11110 ugs1md 26.0 \
    COMPONENTS="NX11110_3d_to_2d_flattener NX11110_assemblies \
    NX11110_c_p_p_runtime NX11110_dotnet_runtime NX11110_drafting \
    NX11110_dxf_to_ug NX11110_dxfdwg NX11110_features_modeling \
    NX11110_gateway NX11110_grip_execute NX11110_iges \
    NX11110_nx_freeform_1 NX11110_nx_sheet_metal \
    NX11110_pcf_package_file NX11110_pv_ugdatagenerator \
    NX11110_sla_3d_systems NX11110_solid_modeling \
    NX11110_step_ap203 NX11110_step_ap214 NX11110_ufunc_execute \
    NX11110_ug_collaborate NX11110_ug_kf_checker \
    NX11110_ug_kf_execute NX11110_ug_smart_models \
    NX11110_ug_to_dxf NX11110_ug_web_express \
    NX11110_ugopen_menuscript" OPTIONS=SUITE ck=81 \
    SIGN="1BEC 143A A5FB 9942 E51D EB73 C77B E6DF 5085 \
    8628 2893 D824 8DA1 7F70 1D89 17AA 08D7 E953 F4AB \
    B837 00F2 7BD5 D33F 8A12 AD62 BEAB 2C1B 4D3F 2C55 A291"

```

```
INCREMENT NX11110 ugslmd 26.0 permanent 56 \  
  SUPERSEDE DUP_GROUP=UHD user_info="NX M-1 Dsgn (FL)" \  
    ISSUED=23-aug-2007 ck=91 SIGN="01ED 1ABE 0ED4 853C 4F41 \  
    FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 53E8 F2DF 009D \  
    602B D7A9 A6A7 8511 77CE 66E1 16E4 DFEF C891 7E7A 0480 \  
    9F7C 67AD 7BC9"
```

The purpose of a PACKAGE line is to support two different licensing needs:

1. License a product SUITE. Siemens PLM Software uses the suite package to enforce bundles in some products.
2. Provide a more efficient way of distributing a license file that has a large number of features that share the same INCREMENT / FEATURE line arguments.

The function of the PACKAGE line is to define a group of features that is specified in the component list. The PACKAGE line in the license file, by itself, does not license anything -- it requires a matching INCREMENT / FEATURE line to license the whole PACKAGE.

INCREMENT / FEATURE Lines

EXAMPLE :

```
INCREMENT gateway ugslmd 26.0 permanent 56 \
  HOSTID=ANY SUPERSEDE DUP_GROUP=UHD user_info="gateway module" \
    ISSUED=30-Aug-2007 BORROW=2880 ck=179 SIGN="21ED 1ABE 009D \
      C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 \
        0ED4 853C 4F41 602B D7A9 A6A7 8511 77CE 66E1 16E4 DFEF \
          53E8 F2DF 9F7C 67AD 7BC9"
```

The INCREMENT / FEATURE line describes the license to use the product.

The vendor daemon (*ugslmd*) processes only the first FEATURE line for a given feature.

SYNTAX:

```
INCREMENT name vendor daemon version exp. date # of licenses \
  HOSTID=hostid SUPERSEDE DUP_GROUP=UHD user_info="<Optional Text>" \
  ISSUED=dd-mmm-yyyy BORROW=nnnn ck=nnn SIGN="nnnn ... nnnn"
```

name	The name given to the license module by Siemens PLM Software.
vendor daemon	The name of the Siemens PLM Software vendor daemon, <i>ugslmd</i> , that serves this feature.
version	The highest version of this feature that is supported by this license.
exp. date	The expiration date. (If this field is set to "permanent", then the license never expires.)
# of licenses	The number of floating licenses for this feature.
HOSTID=hostid	A host identifier supported by Siemens PLM Software. Used only if the feature is to be bound to a particular host.
SUPERSEDE	All licenses issued before the date specified in ISSUED= are superseded by this line and become ineffective.
DUP_GROUP=UHD	Allows a single user, host, and display combination to use only one license seat.
user_info="<Optional	Describes the licensed product in more detail.

Text>"	
ISSUED=dd-mmm-yyyy	The date the product version was released.
BORROW=nnnn	The maximum number of hours a feature can be borrowed.
ck=nnn	A checksum value, useful with the "lmutil lmcksum" command, which verifies that the license has been entered correctly.
SIGN="nnnn ... nnnn"	A hexadecimal number that "authenticates" the readable license file text, ensuring that the license text has not been modified.

Editable Parameters of the License File

Within the Siemens PLM Software license file, you have the option to modify three of the data items.

- hostnames on the SERVER line(s)
- port numbers on SERVER line(s)
- user_info on INCREMENT / FEATURE line(s)

Everything else is used to compute the license signature and must not be edited.

Note Do not change the user_info field for the feature "server_id".

Note All data in the license file is case sensitive unless otherwise indicated.

Hostname

This is the hostname for the license server. The hostname is limited to 1024 characters. The string returned by the UNIX "hostname" or, on some systems, "uname -n" command. On Windows use the value returned from the Command Prompt "hostname" command. If you don't supply the hostname to Siemens PLM Software when requesting a license file, "YourHostnameX" or "this_host" is used in the license file as a place holder for the actual hostname and should be replaced with the real hostname. The proper hostname value is used on the client side for setting the server setting to port@hostname.

Port Number

This is the TCP port number used by the client application to communicate with the license server. A port number is required if the license file is a 3-server redundant license file. The initial value is 28000 but can be changed. The proper port number value is used on the client side for setting server value to port@hostname. The port 28000 has been reserved through IANA by Siemens PLM Software for this purpose and it is highly recommended that this port value be used to avoid a conflict with another software product.

user_info

The `user_info` field in the activating INCREMENT / FEATURE line is used to display a descriptive name for the bundle. You can delete or edit this field to provide a different name. Do not exceed 20 characters for this field. Do not change this field for the "server_id" license module, as this value is your WebKey access code.

Do not use special characters such as quotes within the `user_info` field since they may corrupt the license file. License file lines are limited to 4096 characters with a '\ ' as a continuation character. Do not put a continuation character in the middle of a `user_info` field. Instead, move a line continuation character before the `user_info` field and place the field on the next line.

Types of Individual Licenses

The license files created by Siemens PLM Software can specify any of the following license types:

Floating / Concurrent	Anyone on the network can use the licensed module, up to the limit specified in the license file.
Node-locked	The licensed module can be used only on one node.
Mixed	Mixes node-locked and floating licenses in the same license file.

Floating / Concurrent Licenses

A floating license means anyone on the network can use the licensed module, up to the number of licenses specified in the license file. Floating licenses have no hostids designated on the INCREMENT / FEATURE lines but always have a SERVER line in the license file.

Node-Locked Licenses

Node locking means the license module can be used only on one node. A node-locked license has a "HOSTID=" set to the hostid it is locked to on its INCREMENT / FEATURE line.

Mixed Node-Locked and Floating Licenses

Node-locked and floating licenses mixed in the same license file are shown below.

```
EXAMPLE :

SERVER serverA COMPOSITE=08002b42b116 28000
VENDOR ugsldm
INCREMENT gateway ugsldm 26.0 permanent 4 \
    SUPERSEDE DUP_GROUP=UHD user_info="gateway module" \
    ISSUED=30-Aug-2007 ck=179 SIGN="21ED 1ABE 009D F2DF \
    C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 \
    0ED4 853C 4F41 602B D7A9 A6A7 8511 77CE 66E1 16E4 DFEF \
    53E8 9F7C 67AD 7BC9"
INCREMENT drafting ugsldm 26.0 permanent 1 \
    HOSTID=12001234 SUPERSEDE DUP_GROUP=UHD \
    user_info="drafting module" ISSUED=30-Aug-2007 ck=179 \
    SIGN="31ED 1ABE 8511 77CE C891 7E7A 0480 FE0B 8D54 A7E9 \
    29A8 DDE1 68CF B4AA 1DD5 0ED4 853C 4F41 602B D7A9 A6A7 \
    67AD 7BC9 66E1 16E4 DFEF 53E8 F2DF 009D 9F7C"
INCREMENT drafting ugsldm 26.0 permanent 1 \
    HOSTID=1700ab12 SUPERSEDE DUP_GROUP=UHD \
    user_info="drafting module" ISSUED=30-Aug-2007 ck=179 \
    SIGN="41ED 1ABE 8511 77CE C891 7E7A 0480 FE0B 8D54 A7E9 \
```

```

29A8 DDE1 68CF B4AA 1DD5 0ED4 853C 4F41 602B D7A9 A6A7 \
67AD 7BC9 66E1 16E4 DFEF 53E8 F2DF 009D 9F7C"
INCREMENT drafting ugslmd 26.0 permanent 2 \
SUPERSEDE DUP_GROUP=UHD user_info="drafting module" \
ISSUED=30-Aug-2007 ck=179 SIGN="51ED 1ABE 8511 77CE \
C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 \
0ED4 853C 4F41 602B D7A9 A6A7 67AD 7BC9 66E1 16E4 DFEF \
53E8 F2DF 009D 9F7C"

```

This allows for one use of drafting on nodes 12001234 and 1700ab12, but two licenses of drafting and four licenses of gateway to be used anywhere else on the network. Nodes 12001234 and 1700ab12 can also utilize the floating licenses.

Packages

Siemens PLM Licensing uses "packages" to group features. The license file contains a PACKAGE line for each of these groupings. The COMPONENT field contains a list of all included features. An INCREMENT / FEATURE line is required to activate a PACKAGE definition.

Siemens PLM Licensing recognizes two types of packages: non-suite packages and suite packages. Non-suite packages are designed to simplify and shorten the license file. Suite packages are designed to tie component features together to be checked out as a group. The presence of the OPTIONS field on the PACKAGE line distinguishes the package types.

Non-suite packages do not use OPTIONS=SUITE in the PACKAGE definition line. The components of non-suite package are independent of one another and act just like they would if they had their own separate INCREMENT lines.

EXAMPLE :

```

PACKAGE ACME_GATE ugslmd 26.0 COMPONENTS="gateway \
solid_modeling features_modeling usr_defined_features \
free_form_modeling assemblies drafting iges dxf_to_ug \
ug_to_dxf sla_3d_systems" ck=183 SIGN="61ED 1ABE 8511 77CE \
C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 \
0ED4 853C 4F41 602B D7A9 A6A7 67AD 7BC9 66E1 16E4 DFEF \
53E8 F2DF 009D 9F7C"

INCREMENT ACME_GATE ugslmd 26.0 permanent 56 \
SUPERSEDE DUP_GROUP=UHD user_info="ACME Corp Bundle" \
ISSUED=30-Aug-2007 ck=179 SIGN="71ED 1ABE 8511 77CE \
C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 \
0ED4 853C 4F41 602B D7A9 A6A7 67AD 7BC9 66E1 16E4 DFEF \
53E8 F2DF 009D 9F7C"

```

Suite packages have the following differences from non-suite packages:

1. OPTIONS=SUITE is in the PACKAGE definition line.
2. Features in the COMPONENTS list can be prefixed with the package name and an underscore.
3. When the initial component feature is checked out, the suite package is checked out as well, and a license for each of the other component features is reserved for that session of the application.

Suite packages are key to the Suite Bundles implementation of Siemens PLM Licensing.

Siemens PLM Software Suite Bundles

Suite Bundles are suite packages that Siemens PLM Software has predefined to meet the general needs of customers at a lower cost than purchasing individual floating licenses. The following example shows an NX Mach 1 Designer Bundle.

EXAMPLE :

```
PACKAGE NX11110 ugslmd 26.0 \  
  COMPONENTS="NX11110_3d_to_2d_flattener NX11110_assemblies \  
  NX11110_c_p_p_runtime NX11110_dotnet_runtime NX11110_drafting \  
  NX11110_dxf_to_ug NX11110_dxfdwg NX11110_features_modeling \  
  NX11110_gateway NX11110_grip_execute NX11110_iges \  
  NX11110_nx_freeform_1 NX11110_nx_sheet_metal \  
  NX11110_pcf_package_file NX11110_pv_ugdatagenerator \  
  NX11110_sla_3d_systems NX11110_solid_modeling \  
  NX11110_step_ap203 NX11110_step_ap214 NX11110_ufunc_execute \  
  NX11110_ug_collaborate NX11110_ug_kf_checker \  
  NX11110_ug_kf_execute NX11110_ug_smart_models \  
  NX11110_ug_to_dxf NX11110_ug_web_express \  
  NX11110_ugopen_menuscript" OPTIONS=SUITE ck=81 \  
  SIGN="81ED 1ABE 8511 77CE 0ED4 853C 4F41 602B D7A9 A6A7 \  
  C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 \  
  67AD 7BC9 66E1 16E4 DFEF 53E8 F2DF 009D 9F7C"  
  
INCREMENT NX11110 ugslmd 26.0 permanent 56 \  
  SUPERSEDE DUP_GROUP=UHD user_info="NX M-1 Dsgn (FL)" \  
  ISSUED=23-aug-2007 ck=91 SIGN="91ED 1ABE 8511 77CE \  
  C891 7E7A 0480 FE0B 8D54 A7E9 29A8 DDE1 68CF B4AA 1DD5 \  
  0ED4 853C 4F41 602B D7A9 A6A7 67AD 7BC9 66E1 16E4 DFEF \  
  53E8 F2DF 009D 9F7C"
```

Setting Bundles

The setting of bundles is done on the client side and should be documented in the application licensing specific documentation. If the application is shipped with the Siemens PLM Licensing Tool see the section **Optional Features** for more information.

Automatic Bundle Consolidation

Automatic Bundle Consolidation is a Siemens PLM Licensing mechanism that is initiated when you check out a licensed module from a bundle for the first time. The goal of this mechanism is to consolidate licensed modules to a single bundle to maximize the number of licensed modules that are available for use. The mechanism is always on and can't be turned off.

While this mechanism will reduce crossover licensing, it will not eliminate it because some functionality doesn't release its license until the new functionality's license has been checked out. In these situations, returning to a state where only the base functionality is being used before entering a new application will further reduce crossover licensing.

The following scenarios demonstrate how the Automatic Bundle Consolidation mechanism would work in two situations, using NX as an example application.

Bundle Checkout Protocol – Scenario One

You start the NX Gateway module, but the bundle that you selected is not currently available. At that time, Siemens PLM Licensing checks out a non-bundled license module from the license server to your session. When a bundled version of the same module (Gateway) becomes available during the session and you check out another licensed module within that bundle, Siemens PLM Licensing checks out the bundled version of Gateway and checks in the non-bundled version, making it available for another user.

Bundle Checkout Protocol – Scenario Two

You start the NX Gateway module and it is available in the first bundle. Siemens PLM Licensing checks out a bundled license module from the first bundle to your session. You then check out another NX module, such as Solid Modeling, but it is only available in the second bundle. Again, Siemens PLM Licensing checks out a bundled license module from the second bundle to your session. Rather than tie up two bundles, Siemens PLM Licensing checks out the Gateway module from the second bundle and returns the initially checked out Gateway module to the first bundle, making it available to another user. Siemens PLM Licensing also changes the configuration settings of the current session to reflect a new primary bundle. For example, if you had `NX11101[;:]ADVDES` set, your session would now run as if you had set it to `ADVDES[;:]NX11101`. This does not change the persistent value set on the client system.

License Borrowing

With License Borrowing, you can check out a single seat (a set of license modules) from a site license server and use those license modules offline.

License Borrowing has the following limitations:

- The duration of the borrowing is up to 120 days (2880 hours).
- The client platforms that are supported are Windows and Mac OS X. The license server can be on any normally supported platform.

To activate borrowing, you must contact your sales representative and order borrowing. Once ordered, you will be sent a new license file containing the BORROW keyword on all features that can be borrowed.

Borrowing Licenses

The borrowing of licenses is done on the client side and should be documented in the application licensing specific documentation. If the application is shipped with the Siemens PLM Licensing Tool see the section **Optional Features** for more information.

Checking borrowed licenses and expiration dates

On the client system determining what licenses are borrowed can be done with “`lmutil lmborrow -status`”.

Determining who borrowed a license

Develop a report of all active license users by using “`lmutil lmstat -c port@hostname -A`”. Inside the report search for the keyword “linger” to see who is borrowing. From the output excerpt in the following example it can be determined that `nx_user1` on workstation `nx_client1` has borrowed 1 gateway license for 604740 seconds starting from September 1st at 13:33.

EXAMPLE :

```
...
Users of gateway: (Total of 1 license issued; Total of 1 license in use)
  "gateway" v26.0, vendor: ugslmd
  floating license
    nx_user1 nx_client1 nx_client10.0 (v26.000) (license_server/28000 101),
  start Wed 9/1 13:33 (linger: 604740)
...
```

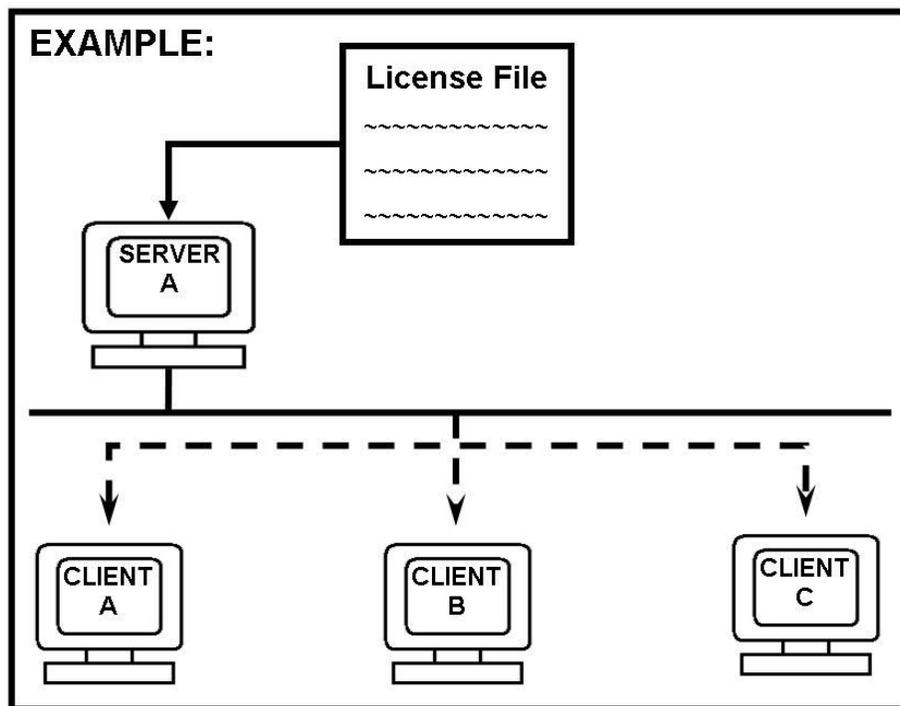
License Configurations

Siemens PLM Licensing is designed to support the following license configurations:

- Single Server Configuration
- Standalone Node-Locked Configuration
- Redundant Server Configuration
- Multiple Server Configuration

Single Server Configuration

The single server configuration has one server that your clients communicate with for licenses. Clients A, B, and C check out licenses from Server A. If Server A goes down, licenses are denied.



Benefits of a Single Server Configuration

- Single point of administration.
- Good for customers with small installations who want to focus their resources on a few key servers.
- Best for installations that have single point(s) of failure in the network between the application and license server.

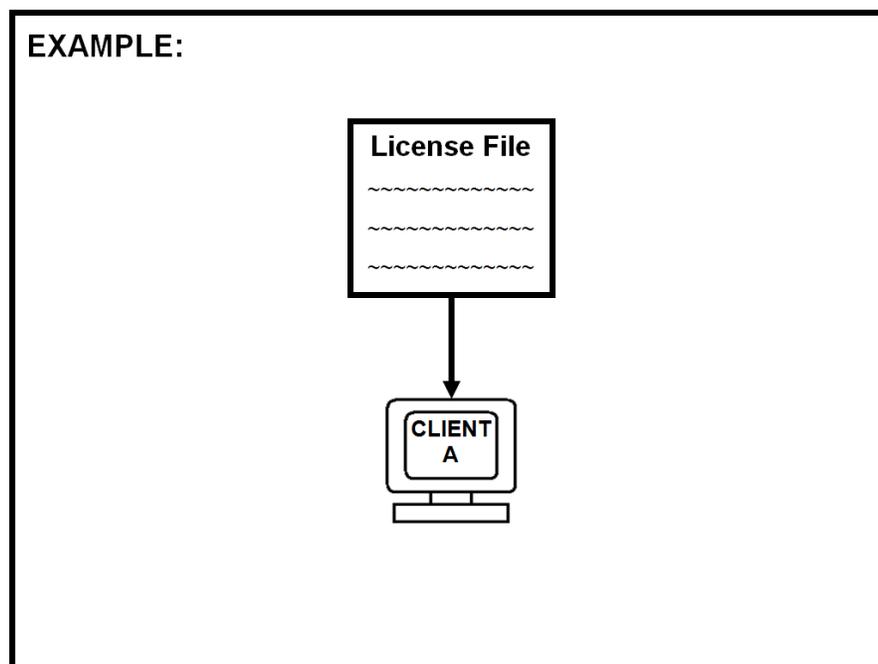
Setup for Single Server Configuration

When asked for the license server by the installation software of a Siemens PLM Software application use the port on the SERVER line (28000) and the hostname on the SERVER line (license_server) in the following format:

```
28000@license_server
```

Standalone Node-Locked Configuration

The Standalone Node-Locked Configuration has no server. The client points directly to the license file. The licenses in the license file are locked to Client A and are not available to any other client.



Benefits of a Standalone Node-Locked Configuration

- No need to maintain a server.
- Good for customers with small installations (less than 5) who want to focus on clients instead of servers.

Setup for Standalone Node-Locked Configuration

When asked for the license server by the installation software of a Siemens PLM Software application, use the path and file name of the license file you saved from Siemens PLM Software:

UNIX, Linux and Mac OS

```
/LicenseFiles/splm.lic
```

Windows:

```
C:\LicenseFiles\splm.lic
```

Redundant Server Configuration

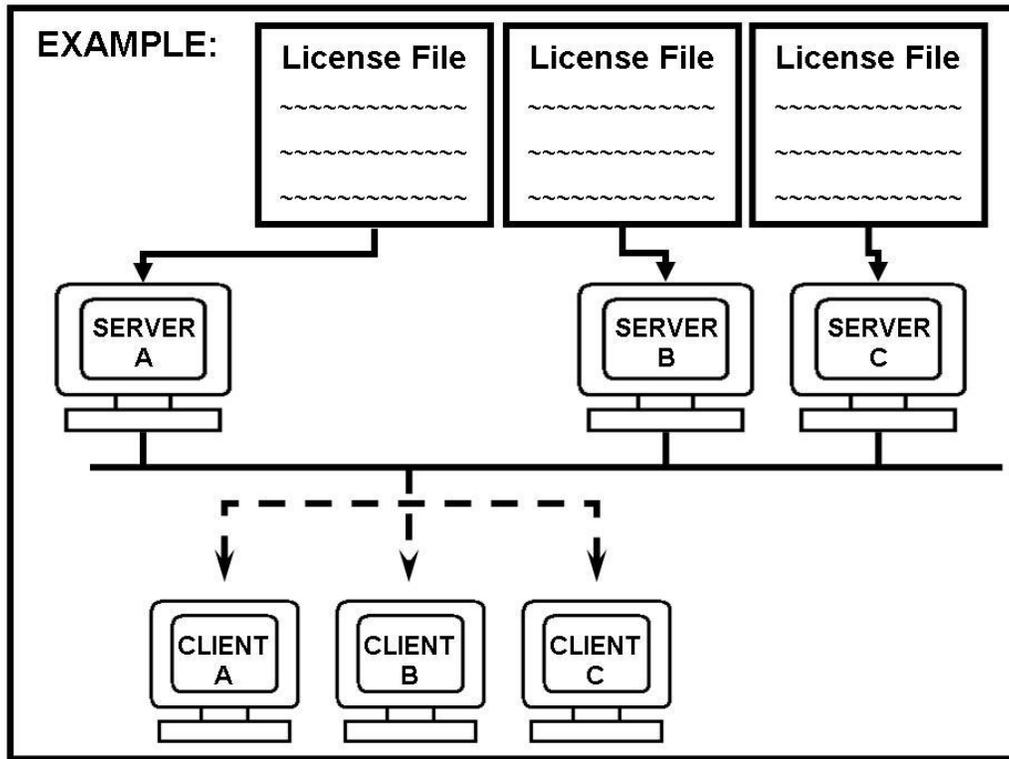
Siemens PLM Licensing supports redundant license servers operating as a single logical license server. Redundant servers help ensure the availability of your licenses in the event of a daemon crash until your local system administrator is available.

This feature is controlled by the SERVER lines in the license file. To implement Server Redundancy, you must identify and provide the hostids for three servers where copies of the license file will reside. Upon receiving this data, Siemens PLM Software generates your license file with the corresponding three SERVER lines.

You should verify that each license server has Siemens PLM Licensing installed on a local file system. Proceed by starting each license server on each machine in the order they are listed in the license file, starting with the server listed on the top line.

The redundant server configuration requires at least two of the three servers to be active for the licenses to be available. No licenses are available until this quorum of two is met. A quorum of servers is defined as a strict majority of servers listed in the license file, so the quorum in the three-server configuration is two. If only one of the servers is available, the quorum is not satisfied and no licenses will be available.

One of the servers starts out as the master server and serves licenses. If the master goes down, another server takes over as master. Once the issue that brought down the master server is resolved, you should reset the license servers at your convenience. To reset the license servers, stop all three license servers and then restart in the order they are listed in the license file, starting with the server listed on the top line. See the sections on “Stopping the Siemens PLM Licensing License Server...” and “Starting the Siemens PLM Licensing License Server...”, later in this guide, for instructions on resetting the license daemon.



Benefit of a Redundant Server Configuration

A redundant server configuration increases the probability that all licenses will be available (if all other single points of failure have been removed).

Considerations

The following items should be considered relative to this specific type of server configuration:

- This configuration should be maintained by a full time system administrator.
- If one server goes down, the odds of a server failure become greater than that of a single server system, since either of the other two servers failing will cause failure by not satisfying the quorum.
- All three redundant servers must maintain communications with each other.
- The server settings on the client node should conform to the `port@hostname1,port@hostname2,port@hostname3` syntax.

Setup for a Redundant Server Configuration

The order in which the servers are listed is the order in which they are checked. If the first server is not the master, the client will continue to search through the license servers until either a master server is found or all three servers have been checked.

When asked for the license server by the installation software of a Siemens PLM Software application, use the ports on the SERVER lines (28000, 28000 and 28000) and the hostnames on the SERVER lines (serverA, serverB and serverC) in the following format:

```
28000@serverA,28000@serverB,28000@serverC
```

Effect on the License File

The license file will contain three SERVER lines for each of the license servers.

Server line

```
SERVER serverA COMPOSITE=08002b32b116 28000
SERVER serverB COMPOSITE=080031700455 28000
SERVER serverC COMPOSITE=0802b17007a8 28000

VENDOR ugs1md

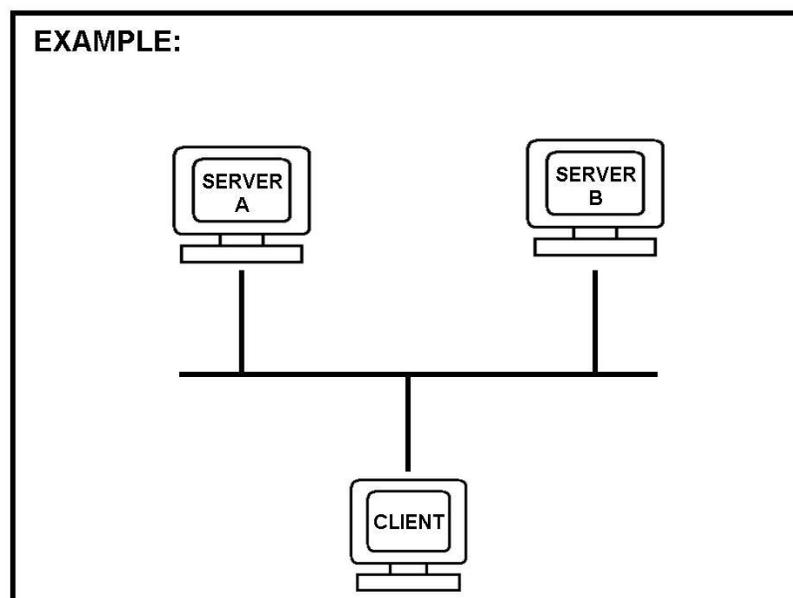
INCREMENT cam_base ugs1md 26.0 permanent 56 \
  SUPERSEDE ISSUED=01-dec-2007 DUP_GROUP=UHD ck=119 \
  SIGN="1BEC 143A A5FB 9942 E51D EB73 C77B E6DF 5085 8628 2893 \
  D824 8DA1 7F70 1D89 17AA 08D7 E953 F4AB B837 00F2 7BD5 D33F \
  8A12 AD62 BEAB 2C1B 4D3F 2C55 A291"
INCREMENT drafting ugs1md 26.0 permanent 56 \
  SUPERSEDE ISSUED=01-dec-2007 DUP_GROUP=UHD ck=103 \
  SIGN="2BEC 143A A5FB 9942 E51D EB73 C77B E6DF 5085 8628 2893 \
  D824 8DA1 7F70 1D89 17AA 08D7 E953 F4AB B837 00F2 7BD5 D33F \
  8A12 AD62 BEAB 2C1B 4D3F 2C55 A291"
INCREMENT assemblies ugs1md 26.0 permanent 56 \
  SUPERSEDE ISSUED=01-dec-2007 DUP_GROUP=UHD ck=120 \
  SIGN="3BEC 143A A5FB 9942 E51D EB73 C77B E6DF 5085 8628 2893 \
  D824 8DA1 7F70 1D89 17AA 08D7 E953 F4AB B837 00F2 7BD5 D33F \
  8A12 AD62 BEAB 2C1B 4D3F 2C55 A291"
INCREMENT gateway ugs1md 26.0 permanent \
  SUPERSEDE ISSUED=01-dec-2007 DUP_GROUP=UHD ck=98 \
  SIGN="4BEC 143A A5FB 9942 E51D EB73 C77B E6DF 5085 8628 2893 \
  D824 8DA1 7F70 1D89 17AA 08D7 E953 F4AB B837 00F2 7BD5 D33F \
  8A12 AD62 BEAB 2C1B 4D3F 2C55 A291"
```

Note The port number is required in the license file for redundant server configuration.

Multiple Server Configuration

The multiple server configuration is a way of combining server configuration types to create an overflow mechanism. The other server configuration types are single and redundant. The multiple license server configuration is set up by setting the license server value with more than one potential license server for the application program.

Note This configuration is also referred to as a license list because of the manner in which it is set up.



Benefits of a Multiple Server Configuration

- No changes to your license files are necessary.
- Allows cross server licensing checkout.
- Allows license requests to overflow to other license servers in cases of occasional heavy use by one group.

Considerations for Multiple Server Configuration

- The time for license activity can increase.
- Is controlled from the client side.
- When a server configuration is down you lose all the licenses that the server configuration had.

Setup for Multiple Server Configuration

The following examples illustrate how to set the server settings for a client node using the multiple server configuration. The list of servers includes two single configurations using the port@hostname syntax. The separator is the semicolon ";".

When asked for the license server by the installation software of a Siemens PLM Software application use the ports on the SERVER lines of both license files (28000 and 28000) and the hostnames on the SERVER lines of both license files (license_server1 and license_server2) in the following format:

```
28000@license_server1;28000@license_server2
```

The order in which the servers are listed is the order in which they are checked. The first server listed should be your primary and closest server.

In this example the client would normally get all of its licenses from license_server1. In the event that license_server1 did not have the license or went down, the license request would move to license_server2. You would receive a license not available message only if the license was not available on any of the two license server configurations.

Administration Tools

The following administration tools are available for Siemens PLM Licensing:

lmcksum	Prints license checksums. To be used when a license file is manually entered.
lmdiag	Diagnoses license checkout problems.
lmdown	Gracefully shuts down all license daemons (both <i>lmgrd</i> and <i>ugslmd</i>) on the license server node(s).
lmhostid	Reports the FLEX hostid of a system.
lmremove	Removes a single user's license for a specified feature.
lmreread	Causes the license daemon to reread the license file and start any new vendor daemons.
lmstat	Helps you monitor the status of all network licensing activities.
lmver	Reports the FLEX version of a library or binary file.

Location of Tools

The default location for these tools is:

UNIX and Linux

On the server

`/usr/Siemens/PLMLicenseServer/`

Mac OS

On the server

`/Application/Siemens/PLMLicenseServer/`

Windows

On the server

`C:\Program Files\Siemens\PLMLicenseServer\`

Executing Tool Commands

All administration tool commands are packaged as one executable called `lmutil`. To execute an administration tool command, enter the following:

```
lmutil command
```

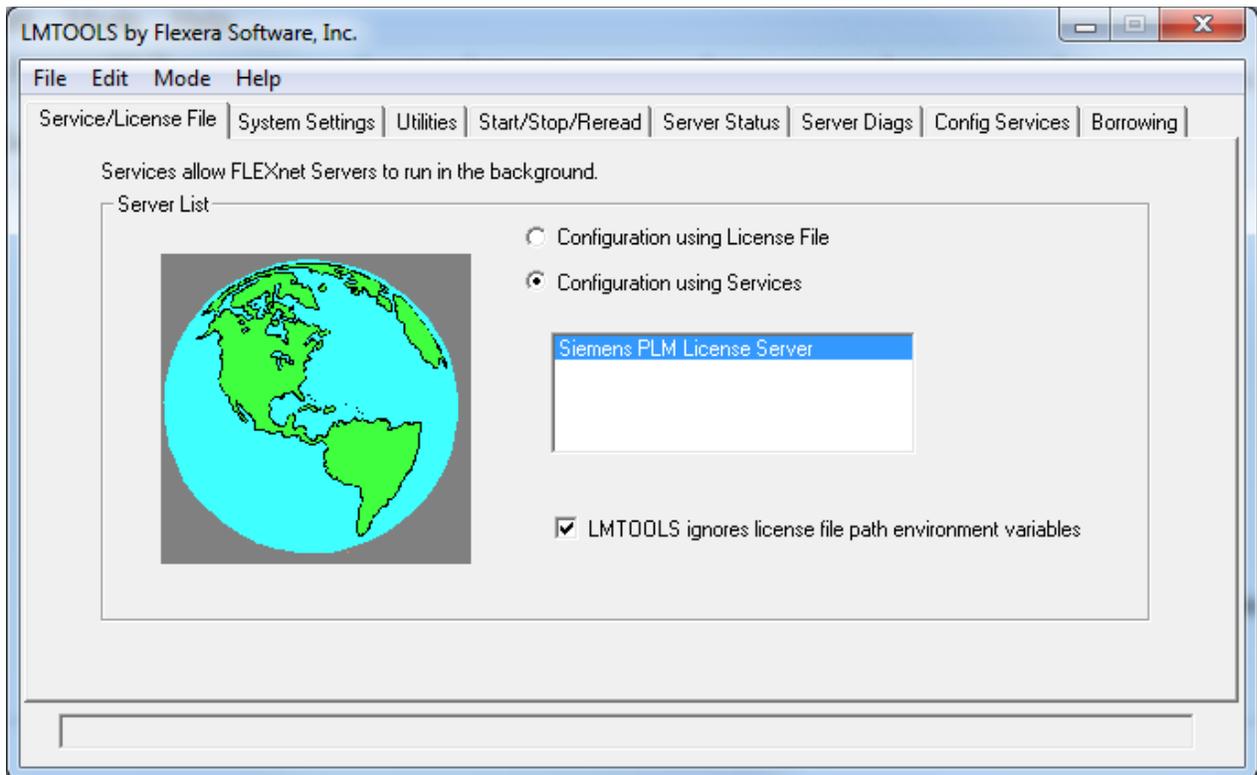
For example, to execute the `lmstat` command, enter:

```
lmutil lmstat -c 28000@license_server
```

LMTOOLS for Windows Platforms

For the Windows platforms, the LMTOOLS.EXE program is provided under **Start→All Programs→Siemens PLM License Server→LMTOOLS**.

The LMTOOLS interface combines license administration tools and the utilities in the *lmutil* executable.



To configure your license service, click the *Configuration using Services* radio button to access the *Configure Services* tab.

Refer to the *Flexera License Administration Guide* for additional information on LMTOOLS.

License Administration on Windows

Siemens PLM Licensing supports the following types of hostids:

- Composite hostid (for license files only)
- Ethernet Address (for individual licenses)
- Hardware Key (for standalone node-locked licenses and individual licenses)

Siemens PLM Licensing has its own installation for more information please refer to the installation guide.

Hardware Key for hostids

A hardware key issued by Siemens PLM Software can act as your hostid, if requested or needed. By connecting a hardware key to the parallel or USB port of a workstation, it can be accessed by the application to define a unique hostid for a workstation. The hostid on the INCREMENT / FEATURE line in your license file must match the number printed on the outside of the hardware key itself. There are two hardware keys manufacturers that are supported WIBU and SafeNet. The driver for that specific manufacturer must also be installed and started on the client machine.

If you have two or more hardware keys from a Siemens PLM Software distributor only one can be used on a machine at a time. If you need to use both licenses on the same machine you need to request that one of the features be locked to the other hardware key or unlocked. You should also return the unused hardware key.

Note Siemens PLM Licensing supports your hardware key purchased from Flexera. Please refer to *Flexera License Administration Guide* for additional information on FLEXID.

Installing the Sentinel Hardware Key

To install the hardware key, perform the following steps:

1. Install the latest Sentinel Driver from the application media or from the SafeNet-Inc website.
2. Verify the installation of this device driver by checking **Control Panel**→**Uninstall a program** then look for **Sentinel System Driver**.
3. Plug the hardware key into the parallel or USB port of the Windows workstation. When using the parallel port lightly tighten the screws to ensure the key cannot be accidentally disconnected.

Installing the WIBU Hardware Key

To install the hardware key, perform the following steps:

1. Install the latest WibuKey Runtime from the WIBU website (www.wibu.com).
2. Verify the installation of this device driver by checking **Control Panel**→**Uninstall a program** then look for **WibuKey Setup (WibuKey Remove)**.
3. Plug the hardware key into the parallel or USB port of the Windows workstation. When using the parallel port lightly tighten the screws to ensure the key cannot be accidentally disconnected.

Replacing the License File

To replace the Siemens PLM Licensing license file, run the licensing installer, for the currently installed version, and select the option **Replace License File**.

The installer puts the old license file inside the **license_backup** folder.

Note If the license file is for a new version of the application program you should install the new license server software.

Stopping the Licensing Service

To stop the Siemens PLM Licensing server using the LMTOOLS located in **Start**→**All Programs**→**Siemens PLM License Server**→**LMTOOLS**:

1. Click the "Service/License File" tab.
2. Click the radio dial "Configuration Using Services".
3. Click on the "Siemens PLM License Server" such that it is highlighted.
4. Click the check box ON by "LMTOOLS ignores license file path environment variables".
5. Click the middle tab "Start/Stop/Reread".
6. Click "Stop Server" button.

Note Even though it says "Stopping Server" in the bottom of the window it is actually done stopping the server.

Starting the Licensing Service

To start the Siemens PLM Licensing server using the LMTOOLS located in **Start→All Programs→Siemens PLM License Server→LMTOOLS**:

1. Click the "Service/License File" tab.
2. Click the radio dial "Configuration Using Services".
3. Click on the "Siemens PLM License Server" such that it is highlighted.
4. Click the check box ON by "LMTOOLS ignores license file path environment variables".
5. Click the middle tab "Start/Stop/Reread".
6. Click "Start Server" button.

Note Even though it says "Starting Server" in the bottom of the window it is actually done starting the server.

License Administration on Linux

Siemens PLM Licensing supports the following types of hostids:

- Composite hostid (default)

Replacing the License File

To replace the Siemens PLM Licensing license file, run the licensing installer, for the currently installed version, and select the option **Replace License File**.

The installer puts the old license file inside the **license_backup** folder.

Note If the license file is for a new version of the application program you need to install the new license server software.

Stopping the License Server

To stop the Siemens PLM Licensing server run:

```
/usr/Siemens/PLMLicenseServer/splmld_cntl stop
```

Starting the License Server

To start the Siemens PLM Licensing server run:

```
/usr/Siemens/PLMLicenseServer/splmld_cntl start
```

License Administration on UNIX

Siemens PLM Licensing supports the following types of hostids:

- Composite hostid (default)

Replacing the License File

To replace the Siemens PLM Licensing license file, run the licensing installer, for the currently installed version, and select the option **Replace License File**.

The installer puts the old license file inside the **license_backup** folder.

Note If the license file is for a new version of the application program you need to install the new license server software.

Stopping the License Server

To stop the Siemens PLM Licensing server run:

```
/usr/Siemens/PLMLicenseServer/splmld_cntl stop
```

Starting the License Server

To start the Siemens PLM Licensing server run:

```
/usr/Siemens/PLMLicenseServer/splmld_cntl start
```

Note On SUN UNIX you may run into a problem with the `lmgrd` and `ugslmd` daemons not releasing their port when running `splmld_cntl start` immediately after `splmld_cntl stop`. This is caused by the system configuration variable "tcp_time_wait_interval" having a default value of 240000 milliseconds which is too high. Flexera recommends a value of 2000 milliseconds.

License Administration on Mac OS

Siemens PLM Licensing supports the following types of hostids:

- Composite hostid (default)

Replacing the License File

To replace the Siemens PLM Licensing license file, run the licensing installer, for the currently installed version, and select the option **Replace License File**.

The installer puts the old license file inside the **license_backup** folder.

Note If the license file is for a new version of the application program you need to install the new license server software.

Stopping the License Server

To stop the Siemens PLM Licensing server run:

```
sudo /Applications/Siemens/PLMLicenseServer/splmld_cntl stop
```

Starting the License Server

To start the Siemens PLM Licensing server run:

```
sudo /Applications/Siemens/PLMLicenseServer/splmld_cntl start
```

Advanced Siemens PLM Licensing Administration

For more advanced license administration techniques associated with using Siemens PLM Licensing, additional products are available for purchase from Flexera Corporation. For more information about Flexera products, contact Flexera Corporation on the Web at www.Flexera.com.

Composite Hostid (CID)

The composite hostid is a unique machine identifier that is used as the hostid on the SERVER line of the license file. It is distinguished from the default FLEX hostid by the key word "COMPOSITE=". It is the only hostid supported for locking a permanent license file to a server. When the CID is used as the license server hostid, the SERVER line will appear as follows.

EXAMPLE :

```
SERVER serverA COMPOSITE=37B5ED1AC61D 28000
```

To obtain the CID, you will have to run a Siemens PLM Licensing utility called "getcid". This utility is provided in the license server media kit or can be downloaded via the Customer Support (GTAC) website <http://support.industrysoftware.automation.siemens.com/gtac.shtml>. The utility must be executed on the target license server or on all three servers in a redundant configuration. The output is a list of 12 digit hexadecimal number that is the CID for that system.

EXAMPLE :

```
$ getcid
The Siemens PLM Software licensing composite hostid is:
"COMPOSITE=DA3791B2ACBF"
Press the ENTER key to continue...
```

If a Windows server has multiple physical addresses, multiple CIDs will be displayed.

EXAMPLE :

```
C:\getcid.exe
Multiple composite hostids(CIDs) indicate you have multiple network adapters.
You should select the first CID in the list unless it changes or disappears
when the hardware configuration changes. In that case use the next one in the
list until you find a CID that remains constant in all configurations. The
Siemens PLM Software licensing CIDs are:
""COMPOSITE=8F4FFDB2C5EE COMPOSITE=B2C5EE8F4FFD""
Press the ENTER key to continue...
```

The concept of multiple CIDs was introduced to allow the flexibility to use a CID associated with any physical address. Previously, you were limited to just the CID associated with the device at the top of the network binding. If you see multiple CIDs, select the first one in the list. If the selected CID changes or disappears for any reason, use the next CID in the list.

Once the CID information is obtained for a license server, this information must be entered into your customer record to generate a permanent license file. The CID can be entered using your WebKey account or by calling your customer service representative (CSR). After the CID has been entered into your customer record you will be sent a permanent license file for you to install on your license server.

Licensing Terms

The following software licensing terms are used to describe Siemens PLM Licensing.

Bundle Consolidation	The act of taking checked out license modules consisting of bundled and floating features and replacing their licensing check outs with licensing check outs from one single bundle.
CID	Acronym for Composite Hostid
Client	Any node on the network that requests a license from the license server.
Composite Hostid	A 12 digit hexadecimal unique machine identifier distinguished from a FlexNet hostid by the key word "COMPOSITE=". It is used to lock a license file to a machine.
Concurrent Licensing	A software license that specifies a maximum number of users who can use the software at the same time. Pricing is usually by seat or user. As software is used, a license is verified and checked out through Siemens PLM Licensing. When the user is finished with the software, the license is checked in for use by another user.
Feature	FEATURE represents any functionality that needs to be licensed.
FLEX	FlexNet Publisher
Floating Feature	Feature that is defined on an INCREMENT / FEATURE line or within a non-suite package.
Hostid	Used to uniquely identify a specific machine, if the license or license file is to be bound to a particular host.
Increment	An INCREMENT line can be used in place of a FEATURE line. It can also be used to incrementally add licenses to a previous FEATURE or INCREMENT line in the license file.
License	The right to use a specific version of a software module. The license specifies what version of the software can be used and how many users can use that software. A license can also have a time period associated with it.

License File	A text file that stores the licensing data. This file contains information about the server nodes and vendor daemons and at least one line of data for each licensed product.
License Key	A 12 character hexadecimal number that authenticates the readable license file text, ensuring that the license text has not been modified.
License Server	The node on a network where license requests are processed.
lmgrd	The main license daemon that sends client application requests to the correct vendor daemon.
Multiple Servers	A way of listing more than one potential license server for the client application program as defined by the server setting on the client side.
Package	An efficient method of distributing a license file containing many features that share the same FEATURE line arguments.
Redundant Servers	A set of three redundant license servers that requires two of the three license servers to be up and running in order to serve licenses.
Server ID	The unique identifier of your license file configuration.
Server Node	A computer system that is running the license server software. The server node contains all the site-specific information on feature usage.
Siemens PLM Licensing	The licensing toolkit and license daemon that some Siemens PLM Products are using to provide consistent licensing functionality and enabling the shipment of combined license files to customer using multiple licensing products.
splm_ugslmd.log	The debug log file for Siemens PLM Licensing. The splm_licensing.log file contains the output from "lmgrd" and "ugslmd" and is used as a debugging aid.
ugslmd	The vendor daemon that Siemens PLM Licensing uses to dispense licenses for the requested features.
Windows	Supported Microsoft Windows Platform.

Optional Features

Siemens PLM Licensing Tool

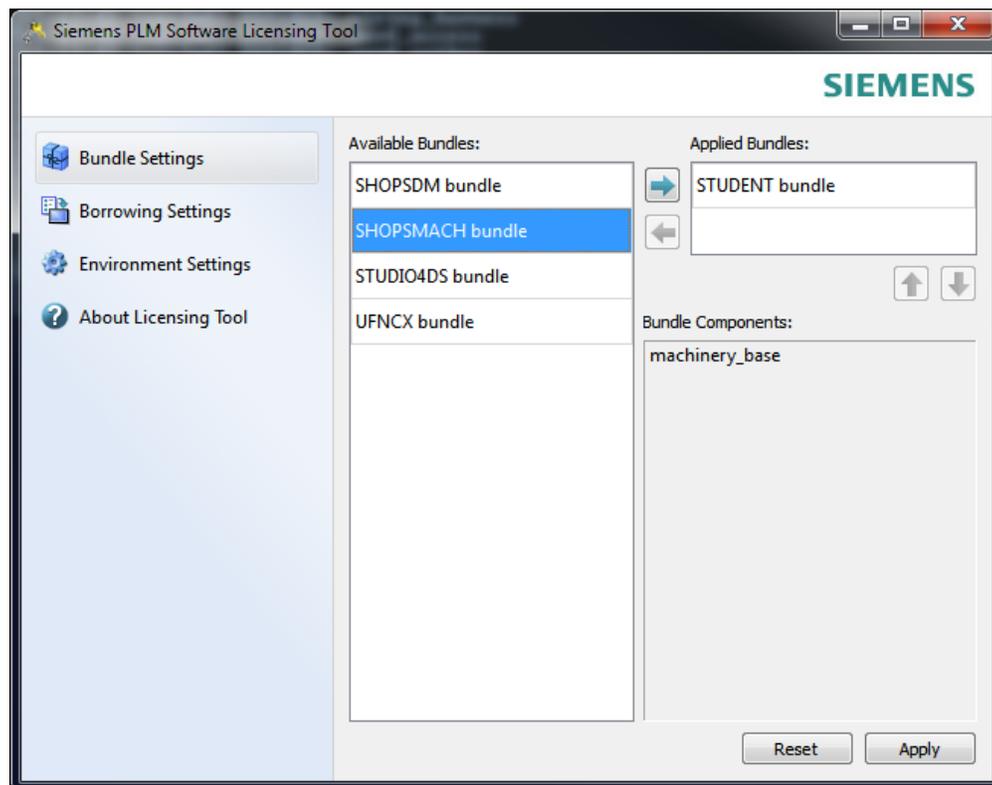
The Licensing Tool is not provided with all Siemens PLM Software applications and therefore this information may not be applicable to all Siemens PLM Software applications. There are two flavors of the tool:

- GUI – Graphical User Interface, available on:
 - a. Windows 32/64bit
 - b. Macintosh OS X 64bit
 - c. Linux: Red Hat 64bit and SUSE 64bit
- CLI – Command Line Interface, available on all platforms supported by Siemens PLM Licensing.

The Graphical User Interface

Bundle Settings

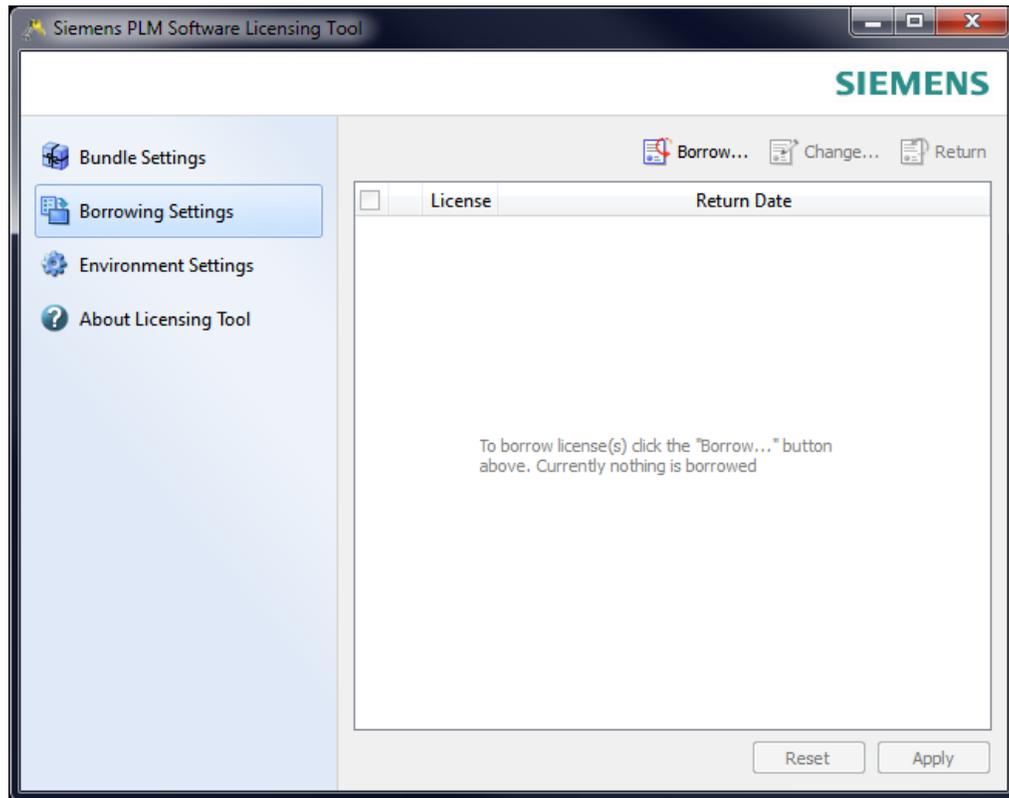
To access a Suite Bundle it is necessary to select the bundle before launching the application. Some applications will allow the selection at the start of the session but this may be required every time the application is launched. The Licensing Tool allows you to set the bundle in a persistent location.



The order in which the bundle names are listed is the order that the application will attempt to check out any feature. The maximum number of bundles that you can select is two.

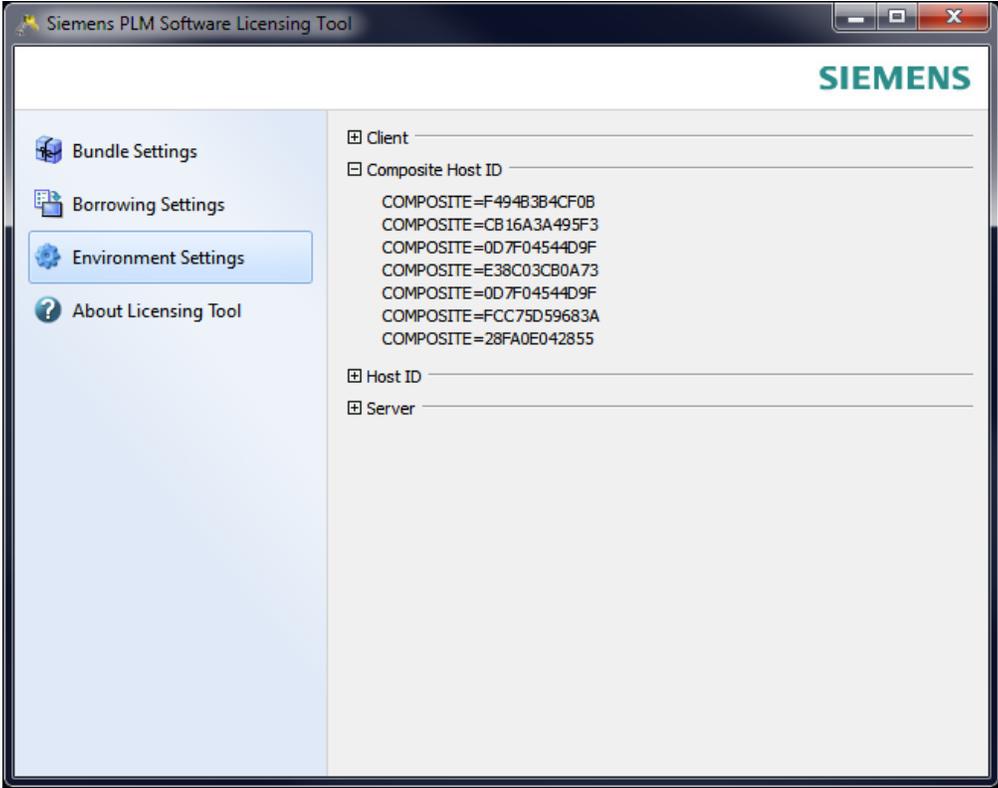
Borrowing Settings

The ability to borrow requires an extra feature to be added to your license file. Contact your Siemens PLM representative for more information about purchasing the ability to borrow.



Note: The "License" value listed in the tool is the `user_info` field value on each license module's INCREMENT / FEATURE lines in the license file. These values correspond to the short descriptions in the price book for each product. If two different products with similar license modules end up on the same license file each license module that is similar is combined into one INCREMENT / FEATURE line. The `user_info` field is combined in the following format "Common to Adv Designer Plus and NX M-1 Dsgn (FL)". Therefore if you are **borrowing** "Adv Designer Plus" you should also borrow all the "Common to..." that contain it in order to get its full functionality.

Environment Settings



The tab displays various client and server environment settings, such as host name, license server, Composite Host ID, toolkit version, etc.

The Command Line Interface

The command line interface flavor of the tool is called **lictool**. It provides similar functionalities to the GUI tool. The following table describes its usage:

Flag	Description	Example
<code>--help</code>	Display help information	<code>lictool --help</code>
<code>--getbundle</code>	Display lists of selected and available bundles. To display bundle components, add <code>--components</code>	<code>lictool --getbundle</code> <code>lictool --getbundle --components</code>
<code>--setbundle</code>	Set bundles by specifying bundle name(s) in double quotes. This overwrites all currently selected bundles.	<code>lictool --setbundle "NX10101" "NX10410"</code>
<code>--unsetbundle</code>	Un-select bundles by specifying bundle name(s) in double quotes. This removes the specified bundle(s) from the currently applied list. To unset all applied bundles, add <code>--all</code>	<code>lictool --unsetbundle "NX10101"</code> <code>lictool --unsetbundle --all</code>
<code>--getborrowable</code>	Display list of available licenses to borrow.	<code>lictool --getborrowable</code>
<code>--getborrowed</code>	Display list of borrowed licenses.	<code>lictool --getborrowed</code>
<code>--borrow</code>	Borrow license(s). The default borrowing day is 7. Use <code>--days</code> to specify a different day.	<code>lictool --borrow "NX Mach Design"</code> <code>lictool --borrow "NX Mach Design" --days 30</code>
<code>--return</code>	Return borrowed license(s).	<code>lictool --return "NX Mach Design"</code>
<code>--getcid</code>	Display Composite Host IDs	<code>lictool --getcid</code>
<code>--getid</code>	Display FNP default host IDs	<code>lictool --getid</code>
<code>--getclientinfo</code>	Display client environment settings	<code>lictool --getclientinfo</code>
<code>--getserverinfo</code>	Display server environment settings	<code>lictool --getserverinfo</code>