
Software License Manager (SLM)[™]

Installation and Reference Guide *for Windows[®]*



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Corporate

Aspen Technology, Inc.
Ten Canal Park
Cambridge, MA 02141-2201
USA
Phone: (617) 949-1000
Fax: (617) 949-1030
Website <http://www.aspentech.com>

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Introduction

This manual describes the license configuration and gives guidelines on how to administer the system. It also contains information which will be useful to IT staff who are managing server systems.

Technical Support

Customers with a valid license and software maintenance agreement can register to access the Online Technical Support Center at <http://support.aspentech.com>.

The support Web site allows you to:

- Access current product documentation
- Search for tech tips, solutions and frequently asked questions (FAQs)
- Search for and download application examples
- Search for and download service packs and product updates
- Submit and track technical issues
- Search for and review known limitations
- Send suggestions

Registered users can also subscribe to our Technical Support e-Bulletins. These e-Bulletins are used to alert users to important technical support information such as:

- Technical advisories
- Product updates
- Service Pack announcements
- Product release announcements

Contacting Technical Support

Technical support is available by phone, fax, and e-mail for customers with a current support contract for their product. For the most up-to-date phone listings, please see the Online Technical Support Center at <http://support.aspentech.com>.

When contacting us via e-mail, please include in your message:

- Your full name, company, phone and fax numbers.
- The software version you are using (shown in the Help menu, About...).
- The serial number of your security dongle, if you have an installation, security, or network issue.
- A detailed description of the problem (attach a simulation case if possible).

We also have toll-free lines that you can use. When you call, please have the same information available.

Support Center Hours

Support Centers	Operating Hours
North America	8:00 - 20:00 Eastern Time
South America	9:00 - 17:00 Local time
Asia and Pacific Region	9:00 - 17:30 Local time
Europe, Middle East, and Africa (EMEA)	8:30 - 18:00 Central Europe time

Support Center Phone Numbers

Support Centers	Phone Numbers
North America	+1 888 996 7100 (Toll-free from U.S., Canada, Mexico) +1 281 584 4357 (From outside U.S., Canada, Mexico) +52 55 5536 2809 (Mexico Support Center)
South America	+54 11 4361 7220 (Argentina Support Center) +55 11 5012 0321 (Brazil Support Center) +0800 333 0125 (Toll-free to U.S. from Argentina) +000 814 550 4084 (Toll-free to U.S. from Brazil) +0800 100 2410 (Toll-free to U.S. from Venezuela)
Asia and Pacific Region	+81 3 3262 1743 (Tokyo, Japan) +65 6395 39 00 (Singapore)
Europe, Middle East, and Africa (EMEA)	+32 2 701 95 55 If you are calling from one of the countries listed below, you can dial your in-country toll-free number:
Country	Toll-free Number
Austria	0800-111-900
Belgium	0800-40-687
Denmark	8088-3652
Finland	0-800-1-19127
France	0805-11-0054
Germany	0800-101-0068
Ireland	1-800-930-024
Italy	800-905-826
Netherlands	0800-023-2511
Norway	800-13817
South Africa	0800-996-852
Spain	900-951846
Sweden	0200-895-284
Switzerland	0800-111-470
UK	0800-376-7903

Fax Numbers

Support Centers	Fax Numbers
North America	+1 281 504 3999
South America	+54 11 4361 7220 (Argentina) +55 11 5012 4442 (Brazil)
Europe	+32 2 701 94 45
Asia and Pacific Region	+65 6395 39 50 (Singapore) +81 3 3262 1744 (Tokyo)

E-mail Addresses

Support Centers	E-mail
North America	esupport@aspentech.com
South America	LAsupport@aspentech.com Argentina.Support@aspentech.com
Europe, Middle East, and Africa (EMEA)	esupport@aspentech.com
Asia and Pacific Region	esupport@aspentech.com

SLM Overview

AspenTech controls use of its AES product through the Software License Manager (SLM). Licensing information is held in a license file and secured using the SLM dongle. The user requires both a license file and SLM dongle to run the Aspen Engineering Suite (AES) product.

Basic SLM requirements

The basic SLM requirements include the following:

- SLM dongles
- SLM Client (included with all AES product installations)
- Sentinel System Driver
- SLM License Server
-
- SLM License Codes

SLM Dongles

SLM dongles require the Sentinel System Driver, which is normally installed on the SLM client with the software and requires administrator rights during installation. The default SLM dongles are USB port dongles, however, you can request for the parallel port dongles.

Note: The parallel port dongles *cannot* be stacked (having more than one connected in series).

Support for Old Clients

SLM licensing continues to support the serial port Hyprotech green dongles, although the Hyprotech green dongles are being phased out.

SLM Client

Supported SLM Client-Side Operating Systems

If you have a standalone SLM dongle, you need to install the AES product locally, which will include the SLM client. You also must have a parallel port or USB port available on your computer.

The operating systems that support the SLM client-side are: Windows 2000 SP3 and Windows XP SP1.

The Sentinel System Driver is required for a standalone (locally installed) SLM dongle.

Note: The Sentinel drivers are automatically installed with the SLM-enabled software.

Note: SLM may require full write access to the registry on the client computer while AES products are running (for example, when commuting).

Supported SLM Server-Side Operating Systems

If you are using the network, the SLM Client (strgxi2.dll) must be installed and registered on each client workstation, even if the AES product is installed and running from an application server.

The SLM network license server has been tested and validated for Windows 2000 and Windows XP. A network computer with a Pentium or faster processor and 64+ MB of RAM is recommended to avoid conflicts with other applications.

Sentinel System Driver

The Sentinel System Driver required to communicate with the SLM dongle must be installed from the AES product CD.

Install the drivers by running the **RainbowSSD5.39.2.exe** program from the Server\Driver folder of the AES product CD. This installation is silent (in other words, there will be no status messages). To check that the driver is installed, examine the program list in the **Start | Settings | Control Panel | Add\Remove Programs**; you will see an entry for the Sentinel System Driver.

SLM License Server

Each SLM License Server must be running a supported Server Side Operating System and have an available parallel or USB port. The server will have a fixed IP Address. It is further recommended that each SLM License Server be a dedicated server (AES products only).

Note: AES products are not recommended to be used on terminal servers (for example, Windows Terminal Server or Citrix).

SLM License Codes

SLM license codes are used to control access to AES product features. These license codes are contained in a license file and locked to an SLM dongle on the parallel or USB port. All license codes contain a lock code, start date, and end date. In order for the license to be valid, the following must be achieved:

- System clock must fall between the start and end dates.
- Hardware-locking device (parallel or USB port dongle) with matching lock code must be attached to the licensing computer.

Standard license codes start with **AEA** (Aspen Engineering Application), for example AEA_HYSYS_Process. Each license code defines the number of seats you are licensed for (in other words, copies available for use).

Token license codes start with **AET** (Aspen Engineering Token), for example AET_HYSYS_Process. In addition to the Token license code, AEA__Token is used, this license code tracks the tokens in use and also defines any hard limit placed on the number of tokens available.

Unified license codes start with **SLM** (Software License Manager). You can use **SLM** licenses to switch between Bundle, Standard, and Token modes, or to use AEA, AET, and SLM licenses simultaneously.

Note: If you want to upgrade your existing license to a unified license, contact Technical Support: esupport@aspentech.com

Network Connectivity Requirements

SLM is designed for use on private networks (LAN or WAN), but not on public networks (Internet). In cases where the Internet is the only connectivity available, you can establish a VPN (Virtual Private Network) between two endpoints on the corporate network. This enables the SLM to both function properly and provide you with network security.

The minimum connection speed is 128 kbps and must be reliable. Dial-up connections (remote access services) are not recommended due to poor reliability. This is especially true if you attempt to commute licenses over these connections, as reliability is crucial.

The SLM requires TCP/IP network access to ports tcp/5093 and tcp/5094.

Features & Limitations of SLM

The following lists some of the basic features and limitations of the SLM Token system:

- Once the SLM dongle and licenses are installed on the license server, any user who has the Aspen Engineering Suite products on their computer can run the AES product as long as they have a network connection to that license server. If the client computer resides on a different sub-network, or a particular server is desired (if there are multiple), the client can direct their license requests to a particular server through the use of:
 - The SLM Configuration Wizard. AspenTech recommends using this method to set up the server license request.
 - The LSHost environment variable. The environment variable (or its text file equivalent) lists the license server names and the order in which they are called when a license request is made.
- If all SLM servers are unavailable on start-up of the AES product, access to the AES product is denied.
- Once the AES product has started, the client-side software intermittently checks to ensure the SLM server is available. If the server is not available (in other words, loss of access to the SLM while the product is open), the user is prompted to save their case, and subsequently the license is checked back in and the AES product is shut down. The user can then attempt to start the product again and during start-up the other SLM servers are checked for availability. If one is available the user is allowed to continue.
- Licenses that are in use cannot be terminated remotely (in other words, the administrator *cannot* bump users) or via a time limit (with the exception of commuted licenses).

Note: The commuter option can only be used with software from one server at a time. Software from two or more servers cannot be commuted simultaneously.

- SLM has the capability of being loaded on multiple servers. The product licenses or token would need to be divided between servers.

Supported Platforms

The following table lists the type of operating systems supported by SLM and the required software that works with the operating system:

Operating System	Requirement for Additional Software
Windows 2000 SP3	Sentinel drivers installed for the SLM dongle
Windows XP SP1	Sentinel drivers installed for the SLM dongle

License Terminology

Refer to the following table for a description of the license terminology used within this manual:

Term	Description
License	Permission granted to the AES product/program/application/component to use a specific feature.
License Code	An encrypted alphanumeric text string used to define a single licensed feature. Each code is locked to an SLM dongle.
License File	File containing license codes for the specific features licensed to the user.
SLM Dongle	Physical hardware device used to secure licenses.
Standalone License	License granted is local to the user machine.
Network License	License granted/obtained is from a network license server.
Network License Server	Program/service (Windows 2000/SP3 and Windows XP/SP1) running on a computer that is attached to the Local Area Network (LAN or WAN). This grants licenses to the AES product that is running on network user machines.
SLM	Software License Manager, Aspen Engineering Suite (AES) software security system.
Commuted License	Commuting or borrowing is the process of temporarily moving a license from a license server to a standalone computer such as a laptop.

License Types

There are three types of license distribution configurations:

- Standard
- Bundle
- Token

Standard License

Standard licenses are based on setting a specific limit of users who are licensed to use a certain AES product.

Note: Standard licenses are the most common type of licenses.

In Standard licenses, one license is consumed per feature, decreasing the available licenses for that feature by one. For example, the client has 10 network licenses for AES product A, and five network licenses for AES product B. The client can simultaneously run up to 10 copies of AES product A and up to five copies of AES product B. When a user closes a copy of the AES product, the license is released back to the license server allowing other users access to that AES product.

Optionally, a system administrator can customize this process by setting the license server to issue specific licenses only to specific users.

Bundle License

A Bundle is a single Standard license that applies to all the products in the bundle. Similar to Standard license, the limiting factor on the use of the AES product is the user limit. The only difference between Bundle license and Standard license is that a single user, using any individual product can check out the Bundle license, and every additional product beyond the first does not require an additional Bundle license.

Token License

A Token license is similar to the Standard license, however with a Token license you set an upper limit on the number of tokens available and do not need to define a specific number of licenses for any particular AES product.

In Token license, each license requires a certain number of tokens and each AES product requires a certain number of licenses to run. The total amount of tokens required to run an AES product can be determined based on the licenses required by the AES product and the amount of tokens required from each license.

Every time an AES product is running, SLM remembers the number of tokens the product consumes. One or more users can keep running the same or different products simultaneously until the token's upper limit is reached.

The token's upper limit allows any combination of products to be used up to the limit. This makes Token licenses very flexible. You can set up any number of AES product combinations within the framework of your license setting.

For example, AES product A has a token value of 10 and AES product B has a token value of four, the server has an upper limit of 50 tokens. With this configuration you can have the following combinations and more:

- Five users running AES product A.
- Four users to run AES product A and two users to run AES product B.

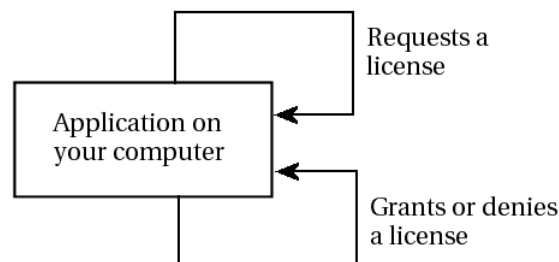
License Modes

SLM not only offers three different types of license distribution configurations, but each type of license has two different modes: Standalone and Network.

Standalone Mode

In the Standalone license mode, the AES product, SLM dongle, and license file are installed on a single computer. This kind of configuration is most often used when the AES product is only used by one individual on a particular computer.

Note: SLM always checks for a standalone license first; if the license is not found or the local security SLM dongle is not installed, SLM searches for an available network license.



Alternate Configurations

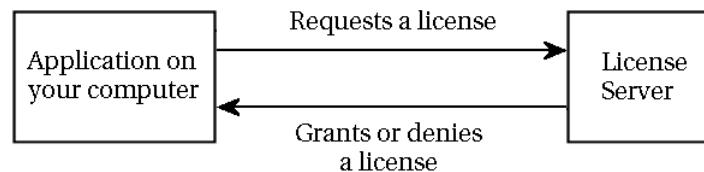
You can configure the computers so that a pool of standalone SLM dongles can be shared. For example, if you will be using SLM dongles A and B to run product A or B respectively. Ensure that both license files for product A and B are installed on your computer. When you run product A and connect the SLM dongle A to your computer, SLM automatically determines which license file to use.

You can also configure the computers to have both standalone and network modes. For example, if you have to run both products A and B, you can install the required SLM dongle and license for product A on your computer. Then you can install the required SLM dongle and license for product B on the network. When you run product B, SLM will first check your computer for standalone licenses. If the required SLM dongle and licenses are not located, SLM will look for an available SLM dongle and license on the network.

Network Mode

The Network license mode is configured so the AES product is executed on your computer, but the licenses are installed on a network license server so they can be shared with other users.

The license server consists of a file of network license codes and the license server application. The license server is used to issue the license codes to all users on the network.



Note: The new SLM network security and the old Hyprotech security systems are NOT compatible. The SLM security system must NOT be installed on the same computer as the old network security system.

Network Upgrades

All security dongles previously used by AspenTech and Hyprotech (prior to SLM, except for the Hyprotech green dongles) are incompatible with SLM. Aspentech requests that you return your old dongles when you no longer need them.

Tip: You can have both the old license server and new network license server running at the same time, if you are upgrading from a pre-SLM AES product version.

Clients are responsible for ensuring that they do not exceed the terms of their license agreement when the two servers are running.

Clients who want to reduce the number of users on either of their network servers (to help ensure that they remain within their contractual limits) can contact their sales representative or Technical Support.

Installing the SLM Dongle

To run the AES product, you need the license files and the SLM dongle. SLM reads a unique locking identity from the SLM dongle. This identity locks the SLM dongle to the licenses. When the AES product runs, the locking codes must then match the SLM dongle's identifier for the licenses to be valid.

SLM Dongle Types

There are two types of SLM dongles: SLM parallel port dongles and SLM USB port dongles.

Tip: After installing the dongle(s), check for communication with your SLM dongle(s) using the SLM Echoid tool.

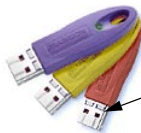
Software License Manager Dongles

SLM dongles are Sentinel SuperPro - Computer ID dongles, manufactured by Rainbow Technologies.

The SLM dongle is installed on the parallel port (printer port) or USB port of your computer with an arrow indicating which end is plugged in.



Parallel port connection



USB port connection

SLM dongles can be used for both standalone and network license modes:

- For the Network license mode, the SLM dongle must be installed on machines that will be used as license servers (refer to Chapter 4, Configuring the License Server for additional information).
- For the Standalone mode, the SLM dongle must be installed on every machine that runs the AES product.

Caution: Do not plug the Computer ID dongle in the serial port because it will damage your computer.

Note: Any computer using the SLM dongle requires certain drivers to communicate with the SLM dongle. If you are having problems with your licensing, ensure that these drivers are installed on your computer by running the setup.exe program found in the Driver directory on the AES product CD.

Hyprotech Green Dongles

Hyprotech green dongles are legacy hardware and can only be used for standalone licenses of the software.

Hyprotech green dongles are installed on either a 9-pin or 25-pin serial port of your computer. The arrow on the label of the Hyprotech green dongle must point towards the computer.

Caution: Do not place the Hyprotech green dongle in the parallel port, you will damage your computer.

SLM Echoid

The SLM Echoid application can be run to ensure that your SLM dongle has been installed properly and your computer can communicate with the SLM dongle. The SLM Echoid is located in the following directory:

C:\Program Files\Common Files\Hyprotech\SLM Client Tools

Checking the Communication of the SLM Dongle

When the SLM Echoid is activated, the following view will appear displaying the serial number and locking code of your IP Address, Disk ID, Host Name, Ethernet Address, and the Sentinel Computer ID number.



A text version of the above view, SLM_Echoid.txt, is also produced in the following directory:

C:\Program Files\Common Files\Hyprotech\SLM Client Tools

This text file provides you with an easy way of sending AspenTech your SLM dongle information if needed.

License Manager Program and Files

The SLM contains many options that can be set to control the behavior of the Licensing System. These options can be set/configured through the use of the SLM Configuration Wizard or the environment variables of the operating system.

Tip: AspenTech recommends using the SLM Configuration Wizard to set the options.

Configuring the SLM

You can configure the SLM operation options and registry variables.

The table below describes the SLM registry variables.

Parameter	Range	Default	Description
No-Net	0, 1	0	Disables the default network broadcast mechanism from searching the network for a network license server. With this parameter set to 1, the application will only look for a standalone license file.
LicenseMode	0, 2	0	You can set the license mode to the following settings: <ul style="list-style-type: none">• Standard (0)• Token (1)• Unified (2) Unified licenses can include Standard, Token, and Bundle.
SuppressBroadcasts	0, 1	0	When set to 1, limits the network broadcast for license servers and keeps the amount of network traffic to bare minimum. This feature only applies to the Unified license.

SLM Configuration Wizard

The SLM Configuration Wizard is a user-friendly front end tool used to set the relevant keys in the registry to the user-specified values.

When the SLM Configuration Wizard starts, it reads the current settings that already exist in the registry. If these settings do not exist, they are set to the default, or in some cases, left blank.

The configuration options are grouped into individual pages. The following table briefly describes each page:

Page	Description
License Mode	Allows you to select the type of licensing configuration you want.
Network Access	Allows you to control the network access to the license servers.
Server List	Allows you to specify the servers that SLM can search for licenses. When you specify the servers, SLM does not broadcast the entire network for random license servers. You can skip this page and leave it blank if you clicked No on the Network Access page.
Advanced Options	Allows you to configure advanced features available in SLM. In order to configure any of the license log file options, select the Set Advanced Options check box. This will enable all the options.

For more information about the SLM Configuration Wizard, refer to Chapter 5, SLM Configuration Wizard.

Environment Variables

You can use environment variables of the operating system to configure the options available in SLM.

Refer to the section “Environment Variables” on page 10-13 for more information.

Tip: AspenTech recommends you use the SLM Configuration Wizard to set the SLM operation variables.

User Options

SLM also contains other options that are set by using specific configuration files: User Alerts and Group Reservations.

User Alerts

Alerts let you know about certain license events. There are seven alert types that can be generated using two different reporting types.

Each alert action has the following format:

```
<alert-type> = <reporting-type1> ON/OFF <reporting-type2>  
ON/OFF
```

To enable alerts, you need a configuration file with information on the license codes in the license code file. The configuration file, **lservrc.cnf**, is a general purpose configuration file associated with a particular license file.

Note: The path to the configuration file is specified by the LServrcCNF environment variable.

Setting the Group Reservations

Group reservations allow you to associate user groups with each feature; each of these user groups is then reserved in a pool containing a certain number of licenses for that feature. Any licenses not specifically reserved fall in the general pool.

The groups must be mutually exclusive. Different groups for the same feature can not have common users or computers. The number of licenses reserved for a feature cannot exceed the number of concurrent copies specified in the license code for that feature.

When the license server receives a request, it checks whether the user making the request belongs to a group. If so—and licenses are available for that group—the license server issues the license(s) and removes it from that group's pool. Otherwise, the requests are serviced with licenses from the general pool until no licenses are available.

License Tools	SLM provides several programs installed as License Tools to administer the advanced features:
<i>SLM Echoid</i>	Used primarily to troubleshoot SLM dongle problems.
<i>LSMon</i>	DOS-command line alternative to WLMAAdmin for basic license monitoring information.
<i>LSWhere</i>	Command line utility for identifying the machine name/IP address/ other details of License Servers available on the network. LSWhere returns a list of license servers and their IP addresses.
<i>SLMCommute</i>	Used to manage commuted licenses; commuting is only allowed if permission to commute has been activated in the feature's license code (contact your AspenTech Sales representative for more details).
<i>CommuteManager</i>	Has similar functions as the SLMCommute, however, it is run from a DOS shell. This tool is mostly used for scripting purposes.
<i>SLM Configuration Wizard</i>	Program used to configure the registry for the SLM.
<i>WLMAAdmin</i>	The Windows License Manager Administration tool and is the primary program used for monitoring and administering license access.
<i>LSUsage</i>	Program used to read usage log files and generate summarized usage statistics.
<i>FTPExport</i>	Uses the File Transfer Protocol (FTP) to send the usage log file from a client's computer/workstation to an FTP server.
<i>SLMUpload</i>	Uses the Hyper Text Transfer Protocol (http) to transfer the usage log file from a web server onto a browser.
<i>SMTPSend</i>	Uses the Simple Mail Transfer Protocol (smtp) to transfer the usage log file by e-mail messages between servers.
	<p>The following tools are located in:</p> <p>C:\Program Files\Common Files\Hyprotech\SLM Admin Tools\</p> <p>FTPExport, SLMUpload with documentation, SMTPSend with documentation, and WLMAAdmin.</p> <p>The following tools are located in:</p> <p>C:\Program Files\Common Files\Hyprotech\SLM Client Tools\</p> <p>CommuteManager, SLM Echoid, LSMon, LSWhere, SLMCommute, and SLM Configuration Wizard.</p>

List of Licensed Programs

The following table shows the list of Aspen Engineering Suite (AES) products that use the SLM. Additional AES products will be added in the future.

The names under the Feature Name column are used internally by the SLM, and appears in the license files and license server messages. The feature names are specified by the user when generating license activity reports.

Licensed Product	Feature Name
ACOL™	HTFS_ACOL
ACX™	HTC_ACX_Engine
APLE™	HTFS_APLE
Aspen Adsim™	AspenAdsim
Aspen Aerotran™	AspenAerotran, AspenMetals, AspenProps
Aspen CatRef®	AspenCatref
Aspen Chromatography®	AspenChromatography
Aspen Custom Modeler®	AspenCustomModeler
ACM Model Export™ Option	ACM_MODEL_EXPORT
Aspen Decision Analyzer™	Econ_Analyzer
Aspen Dynamics®	AspenDynamics
Aspen Enterprise Engineering™	AEE
Aspen FCC®	AspenFCC
Aspen Hetran™	AspenEnsea, AspenHetran, AspenMetals, AspenProps, AspenQchex
Aspen Hydrocracker®	AspenHydrocracker
Aspen Hydrotreater™	AspenHydrotreater
Aspen Icarus Process Evaluator™	Econ_IEE, Econ_IPE
Aspen Icarus Project Manager™	Econ_IEE, Econ_IPM
Aspen Kbase™	Econ_API, Econ_IEE, Econ_IPS, Econ_Kbase
Aspen Plus®	AspenPlus
Aspen Plus® HTRI® Interface Option	HtriInterface
Aspen OLI™ Option	AspenOLIInterface
Aspen OnLine® Option	Online

Licensed Product	Feature Name
Aspen PEP Process Library™ Option	AspenPEP
Aspen Plus BatchFrac™ Option	BatchFrac
Aspen Plus Optimizer™ Option	AspenEOOptimizer
Aspen Plus RateFrac™ Option	RateFrac
Aspen Plus SPYRO® Equation Oriented Interface Option	AspenEospyro
Aspen Plus TSWEET® Interface Option	BREinterface
Aspen Split™ Option	AspenSplitAnalysis, AspenSplitDesign
Aspen WebModels™ Option	WebModels
Aspen Pinch®	AspenPinch
Aspen Properties™	AspenProperties
Aspen SEM™	AspenSem
Aspen Teams™	AspenEnsea, AspenMetals, AspenQchex, AspenTeams
Aspen Utilities™	AspenUtilities
Aspen Water™	AspenWater
Aspen Zyqad™	AspenZyqad
Batch Plus	BatchPlus
COMThermo®	CONCEPTS_FPREGRESS, CONCEPTS_PCREGRESS, CONCEPTS_PHASEEQ, CONCEPTS_PROPTABLE, HYCON_APP, HYCON_COM, HYCON_THERMO, Thermo_FlashMgr, Thermo_PropertyMgr
COMThermo TRC Database™ Option	Thermo_TRC

Licensed Product	Feature Name
DISTIL™	CONCEPTS_AZEOANAL, CONCEPTS_AZEOCOLSEQ, CONCEPTS_COLDES, CONCEPTS_DRD, CONCEPTS_FPREGRESS, CONCEPTS_PCREGRESS, CONCEPTS_PHASEEQ, CONCEPTS_PROPTABLE, CONCEPTS_RCM, CONCEPTS_SPLITGEN, HYCON_APP, HYCON_COM, HYCON_SEP, HYCON_SEP_ASEQ, HYCON_THERMO
DISTIL Complex Columns Module™ Option	CONCEPTS_3PRODSYS, CONCEPTS_COMPLEX, CONCEPTS_NONACSEQ, CONCEPTS_SIMPLECOL, HYCON_SEP_CCM
FIHR™	HTFS_FIHR
FLARENET™	Flarenet
FRAN™	HTFS_FRAN
HX-Net®	CONCEPTS_HI_GRID, CONCEPTS_HICASE, HYCON_APP, HYCON_COM, HYCON_HI
HX-Net Assisted Design Module™ Option	CONCEPTS_HIPROJ, HYCON_HI_ADM
Hyprotech Server™	BaSYS_ServerStandard
HYSYS®	HYSYS_Process, ProFES_Wax
HYSYS Optimizer™ Option	HYSYS_Optimize
HYSYS Amines™ Option	HYSYS_Amsim
HYSYS Crude Module™ Option	HYSYS_Crude, HYSYS_Oil
HYSYS Data Rec™ Option	HYSYS_DataRec
HYSYS DMC+ Link™ Option	HYSYS_DMCLink
HYSYS Dynamics™ Option	HYSYS_Dynamic, HYSYS_Fidelity
HYSYS Electrolytes™ Option	HYSYS_OLIInterface
HYSYS Lumper™ Option	HYSYS_Lumper
HYSYS Neural Net™ Option	HYSYS_NeuralNetL2, HYSYS_NeuralNetL3

Licensed Product	Feature Name
HYSYS Olga Transient™ Option	Extensions_OLGA_L
HYSYS OLGAS 3-Phase™ Option	HYSYS_OLGAS3P
HYSYS OLGAS™ Option	Extensions_OLGAS, HYSYS_OLGAS
HYSYS PIPESIM Link™ Option	HYSYS_PIPESIMLINK
HYSYS Pipesim Net™ Option	HYSYS_PIPESIMNET
HYSYS PIPESYS™ Option	Extensions_PIPESYS
HYSYS RTO™ Offline Option	HYSYS_RTO
HYSYS Sizing™ Option	HYSYS_Sizing
HYSYS Syntex Reactor Models™ Option	Extensions_SYNAMMCON, Extensions_SYNEQURFR, Extensions_SYNEXSTRM, Extensions_SYNMETHAN, Extensions_SYNPRIRFR, Extensions_SYNSECRFR, Extensions_SYNSHIFTR
HYSYS Tacite™ Option	HYSYS_TACITE
HYSYS Upstream™ Option	HYSYS_BlackOil, HYSYS_Lumper
HYSYS for Ammonia Plants™	Extensions_SYNAMMCON, Extensions_SYNEQURFR, Extensions_SYNEXSTRM, Extensions_SYNMETHAN, Extensions_SYNPRIRFR, Extensions_SYNSECRFR, Extensions_SYNSHIFTR, HYSYS_Process, ProFES_Wax
MUSE™	HTFS_MUSE
PIPE™	HTFS_PIPE
Polymers Plus®	PolymersPlus
Process Manuals™ Bulk Solids Handling	ProMan_BS
Process Manuals™ Crystallization	ProMan_CR
Process Manuals™ Drying	ProMan_DR
Process Manuals™ Gas Cleaning	ProMan_GC

Licensed Product	Feature Name
Process Manuals™ Intranet Mode	ProMan_Intranet
Process Manuals™ Mini-Manuals	ProMan_MM
Process Manuals™ Slurry Handling	ProMan_SH
Process Manuals™ Solid Liquid Separation	ProMan_SLS
Process Manuals™ Solvent Extraction	ProMan_SE
Process Manuals™ Waste Water Treatment	ProMan_WWT
Process Tools™	BaSYS_BS, BaSYS_CR, BaSYS_DR, BaSYS_GC, BaSYS_SE, BaSYS_ServerStandard, BaSYS_SH, BaSYS_SLS, BaSYS_WWT
ProFES 2P Tran™	INFOCHEM_MG_Interact, INFOCHEM_Mflash, INFOCHEM_Std_models, ProFes_2pTran, ProFES_SAND, ProFES_SLUG
ProFES 2P Wax™ Option	ProFES_Pipeline_Wax
ProFES 3P Tran™	INFOCHEM_MF_Interact, INFOCHEM_Mflash, INFOCHEM_Std_models, ProFES_3pTran
ProFES Tranflo™	ProFES_Tranflo
Questimate	Econ_Questimate
STX™	HTC_STX_Engine
TASC-Thermal™	HTFS_TASC
TASC-Mechanical™ Option	HTFS_MECHASME

Installing License Files

The license file contains all of the license codes specifying all licensed features of the AES product(s) installed on the computer, and the file is locked to the SLM dongle that is plugged on the computer.

Installing the License File

There are several ways to install the license file on the computer. Depending on whether you are updating the license file, installing a completely new file, or configuring for Standalone mode or Network mode, the procedures vary.

Standalone Mode

In Standalone mode, the license file must be installed on the same computer as the SLM dongle and AES product(s).

Upgrading the License File

If you are upgrading your AES product, you will find included in your package the AES product CD and a floppy disk (or an e-mail if your license file was sent that way) containing an upgraded license file locked to your existing SLM dongle. The upgraded license file will contain the extension 'AEALIC' or 'SLF'.

To install the upgraded license file, do one of the following:

- Double-click on the license file and it will automatically be installed.
- Manually install the license file:

- 1 Copy the license file from the floppy disk (or e-mail) to the following directory:

`C:\Program Files\Common Files\Hyprotech\Shared\`

The license file name is in the following format:

`Lservr_XXX_lockcode.AEALIC` where XXX is the locking criteria for the locking device. It is 080 for SLM dongles.

- 2 Change the extension of the license file from 'AEALIC' or 'SLF' to 'LIC'.

New License File

If you have newly leased or purchased your AES product, you will receive an SLM dongle in addition to the AES product CD and the floppy disk containing your license file.

Network Mode

In the Network mode, the license files and SLM dongles are installed on a network license server, while the AES products are installed on the individual user computers. Thus the AES product licenses can be shared with several users connected to the network.

New License File

Having leased or purchased your AES product for use with a network license, you will find included in your package the AES product CD, an SLM dongle, and a floppy disk (or e-mail) with the license file locked to the SLM dongle.

1 Open the SLM license server directory. The default path is:
C:\Program Files\Rainbow Technologies\SentinelLM 7.2
Server\English

2 Rename or delete any pre-existing license file.

Tip: Renaming the pre-existing license file allows you to revert to this file in the event that there are any problems with the update.

3 Copy the license file from the floppy disk (or e-mail) to the SLM license server directory.

4 Once you have copied the license file to the SLM license server directory, you must rename the file to 'LSERVRC' (no file extension).

5 Next, you must *stop* and *restart* the license server. This is done by running the program loadls.exe. This executable file is found in the license server directory:

C:\Program Files\Rainbow Technologies\SentinelLM 7.2
Server\English

6 Run loadls.exe and select **Remove**.

7 Run loadls.exe again and select **Add**.

Note: Ensure that you reload the license server whenever you change your license file. All users must exit any software using the SLM before the reload is performed.

Alternate Configurations

It is possible to configure the user computers so that a pool of standalone SLM dongles can be shared. For example, if you want to use 10 different AES products, and each product has its own license file and SLM dongle, you must install all 10 different license files on your computer. When you run the various AES products, you can just switch between the 10 SLM dongles, without the need to reconfigure your computer each time a different license file is required.

It is also possible to configure the user computers to have both standalone and network modes. For example, if you need to run two AES products: product A must be limited to your computer and product B can be accessed from the network. To achieve this configuration, you must install the SLM dongle and license file for product A on your computer, while the SLM dongle and license file for product B is installed on the network computer server. When you run either product A or B, SLM will locate the required SLM dongle and license file.

Configuring the License Server

A Network license server computer is made up of the following components:

- SLM dongle
- License Server software
- Network license file (containing network license codes)
- License Server Tools

Tip: Multiple license server computers can be configured to spread the licensing load. This can also be used as a simple and effective form of redundancy.

The best choice for the license server computer is one that is always running, because the network license server computer must be operational for the network users to run the AES products. The most trouble-free installation will result from a license server computer used only for the license server function. This avoids conflicts with other software.

Note: The new SLM network security and the old Hyprotech security systems are NOT compatible. The SLM security system must NOT be installed on the same computer as the old network security system.

Configuring a Network License Server

The following summarizes the steps required to configure a Network license server:

- 1 Install the SLM dongle and license server software.
- 2 Install license tools.
- 3 Install the license file.

Installing the Network License Server

Use the following steps to install the license server and exchange/plug in your SLM dongle:

- 1 Before installing the SLM License Server, shut down and uninstall the old network security server. Ensure that no users are logged on the server.
- 2 Restart the computer.
- 3 Ensure that no Windows programs are running on the computer before starting the network license server installation process.
- 4 Insert the AES product CD into the CD-ROM drive of the computer.

Note: For the computers which have the CD-ROM Autorun feature enabled, steps #5 and #6 are automatically performed. Some Aspen Engineering Suite products have variants on the way the installation of Network License Server software is initiated.

- 5 From the **Start** menu, select **Run**.
- 6 In the **Run** view, type: **d:\setup.exe** and click the **OK** button (where **d:** corresponds to the drive letter of the CD-ROM drive).
- 7 From the view that appears, click **Install SLM Server**.
- 8 A document explaining how to install the License Server will appear. Follow the instructions in the document.

Note: If you want to record your usage, you will need to configure the LServOpts environment variables as described in the section “LServOpts” on page 4-13.

When you have completed installing the network license server software.

- 9 Install the SLM dongle into the parallel port (printer port) or the USB port of your computer.
The SLM dongle has an arrow that indicates which end is plugged in.

Caution: Do not plug this dongle in the serial port because it will damage your computer.

Installing the License Administration Tools

To install the license administration tools:

- 1 Insert the AES product CD into the CD-ROM drive of the computer.

Note: For the computers which have the CD-ROM Autorun feature enabled, steps #2 and #3 are automatically performed. Some Aspen Engineering Suite products have variants on the way the installation of Network License Server software is initiated.

- 2 From the **Start** menu, select the **Run** command.
- 3 In the **Run** view, type: **d:\setup.exe** and click the **OK** button (where **d:** corresponds to the drive letter of the CD-ROM drive).
- 4 From the view that appears, click **Install SLM Server**.
- 5 A document explaining how to install the License Server will appear. Follow the instructions in the document.

Installing the License File

To install the license file for the Network license server:

- 1 Copy the license file to the SLM license server directory. The default SLM license server directory is:
C:\Program Files\Rainbow Technologies\SentinelLM 7.2 Server\English
- 2 Rename or delete any pre-existing license file.
- 3 Rename the new license file to 'LSERVRC' (no file extension).
- 4 Locate the **loads.exe** executable file in the license server directory:
C:\Program Files\Rainbow Technologies\SentinelLM 7.2 Server\English
- 5 Run **loads.exe** and select **Remove** to stop the license server.
- 6 Run **loads.exe** again and select **Add** to start the license server.

Note: Ensure that you reload the license server whenever you change your license file. All users must exit any software using the SLM before the reload is performed.

Testing the Network License Server

You can test your License Server installation to verify its proper installation.

Checking the SLM Dongle

The first test you can perform is to check if the SLM dongle is communicating with the SLM system.

- 1 Open your client license tools folder. The default location is:
C:\Program Files\Common Files\Hyprotech\SLM Client Tools\
Tools\
- 2 Double-click **SLM_Echoid.exe** application to run SLM Echoid and check communication with your SLM dongle.

The SentinelLM Host Lock Code Information Utility view appears displaying the serial number and locking code of your IP Address, Disk ID, Host Name, Ethernet Address, and the Sentinel Computer ID number.



If you cannot see the serial number and locking code for the SLM dongle:

- Make sure that the SLM dongle is properly installed on your computer and run the SLM Echoid again.

The Software License Manager (SLM) dongle is installed on the parallel port (printer port) or the USB port of your computer with an arrow indicating which end is plugged in.

Note: Do not plug the parallel port dongle in the serial port because it will damage your computer.

- If your SLM dongle is properly attached to the server and still no lock code is displayed, ensure that you have installed the Sentinel system drivers used by the server to communicate with the SLM dongle.

Install the drivers by running the **RainbowSSD5.39.2.exe** program from the Driver folder of the AES product CD. This installation is silent (in other words, there will be no status messages).

To check that the driver is installed, examine the program list in the Add/Remove Programs view (open the view by selecting **Start** |

Settings | Control Panel | Add/Remove Programs). You will see an entry for **Sentinel System Driver**.

Checking the License Server

After confirming that the SLM dongle is communicating with the system, check that the license server has been properly initialized by running the WLMAAdmin program and see if the licenses are available.

WLMAAdmin

WLMAAdmin is the primary network license administration tool. It is designed to provide access to most of the SLM licensing features and full information on licensing activities at several levels of detail:

- Server level displays basic details on the active license servers detected on the network.
- Feature/License level displays greater detail on the licenses available on each server.
- User level displays further information on the users currently using the licenses.

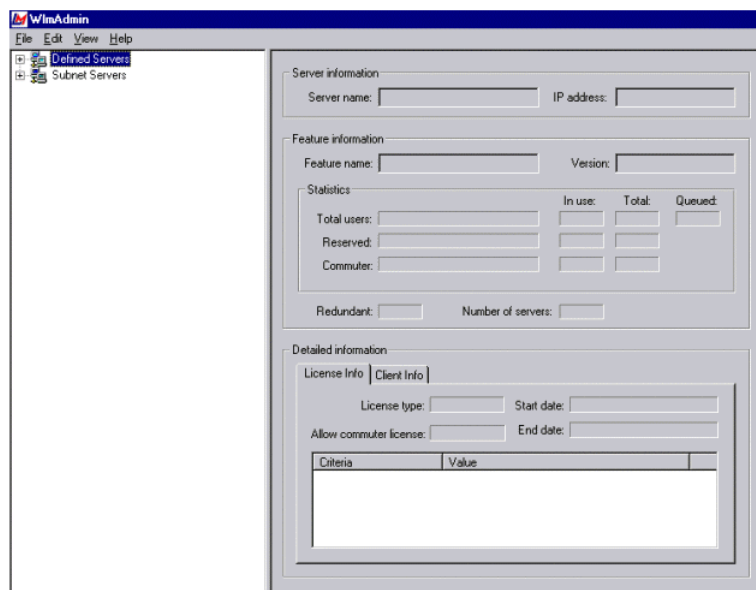
Note: Due to the capabilities of the WLMAAdmin, it is recommended that only administrators have access to this tool and it must not be installed with AES products.

Running the WLMAAdmin

To run WLMAAdmin, double-click on the WLMAAdmin executable file located in the following directory:

C:\Program Files\Common Files\Hyprotech\SLM Admin Tools

The WLMAAdmin view appears.



When you first open the WLMAdmin, you will see a blank screen. From then on, WLMAdmin will start up with the view mode that was last used provided that this was set up in your preferences.

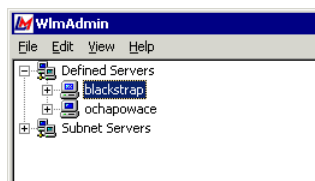
To set your preferences, from the **Edit** menu select **Preferences**. The following table describes the options available:

Object	Description
Time out interval	This is the time interval given for a license server to respond with license information following a query from WLMAdmin. If only partial information is being returned from the server, try increasing this interval. Partial information returned may indicate network communication problems (see Chapter 10, Troubleshooting SLM Problems).
Discover subnet servers on start up	Updates server information for the subnet server list on WLMAdmin start-up. Not recommended, as WLMAdmin will be slow to start-up as it does a network broadcast.
Discover defined servers on start up	Updates server information for the defined server list on WLMAdmin start-up. To retain your defined server list when WLMAdmin is closed you must check this option.
Save these preferences to file	In order to keep any of your preferences, including your defined server list, you must check this option.

Note: Preferences are saved to the WLMAdmin.ini file.

The WLMAdmin view is split into two panes, Navigation and Information.

The Navigation pane (located on the left side of the WLMAdmin view) contains a tree browser that allows you to access the different levels of licensing information.



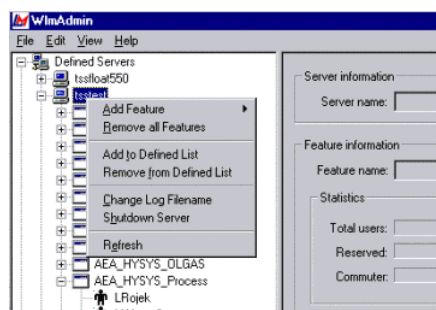
There are two server lists available:

Server	Description
Defined Servers	This is a user defined list of license servers. License information is updated quickly because WLMAdmin is directed to a specific list of servers. This list will be empty when WLMAdmin is first run. You can add servers to the defined server list using the Edit\Defined Server List menu item.
Subnet Servers	This list will be filled after performing a network broadcast to locate all active license servers (in other words, computers running the SentinelLM service) on the network. It can take some time to perform the network broadcast so we recommend that you generally use a defined server list. Accessing license information via the subnet server list is useful if you do not know the name of the license server from which you are accessing licenses.

Note: The Subnet Server option does not search across network Domains or your local Area Segment. So if your network server is located in a different office, WLMAdmin requires the Server name to be specified to browse license features.

You can also manage certain licensing activities by using the Object Inspect menu of items in the Navigation pane.

The Object Inspect menus in the Navigation pane are accessed by selecting an item (Server, Feature, or User) in the Navigation pane and right-clicking.



Note: It is recommended that the options in the Object Inspect menu be used only under the direction of your AspenTech agent.

The following three tables describe the options available:

Object Inspect Menu	Server
Add Feature	Attempts to add licenses to the license file in use by the server. You cannot add features without license codes from AspenTech. As AspenTech will supply you with complete license files, there is no reason to use this option.
Remove All Features	Attempts to remove licenses from the license server.
Add to Defined List	The server will be added to the defined server list.
Remove from Defined List	The server will be removed from the defined server list.
Change Log Filename	Used to change the log filename; overrides the name set in the LServOpts environment variable. Stopping and reloading the SentinelLM service will cause the log filename to revert to that listed in the environment variable.
Shutdown Server	Used to stop the SentinelLM service on that server.
Refresh	Updates licensing information for this server only.

Object Inspect Menu	Feature
Remove Feature	Attempts to remove a license from the license file in use by the server.
Refresh	Updates licensing information for this feature only.

Object Inspect Menu	User
Refresh	Updates licensing information for this user only.

The Information pane (located on the right side of the WLMAAdmin view) displays varying amounts of information depending on the level highlighted in the Navigation pane. The next three views show the information available at the server level, the feature/license level, and the user level respectively.

WlmAdmin
File Edit View Help

Defined Servers

- tsfloat550
- tsstest**
- win98test

Subnet Servers

Server information:

Server name: IP address:

Feature information:

Feature name: Version:

Statistics:

	In use:	Total:	Queued:
Total users:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Reserved:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Commuter:	<input type="text"/>	<input type="text"/>	<input type="text"/>

Redundant: ☐ Number of servers:

Detailed information:

License Info | Client Info

License type: Start date:

Allow commuter license: End date:

Criteria	Value

WlmAdmin
File Edit View Help

Defined Servers

- tsfloat550
- tsstest
 - AEA_Flarenet
 - AEA_HTC_ADX_Engine
 - AEA_HTC_STX_Engine
 - AEA-HTFS_ACDL
 - AEA-HTFS_TASC
 - AEA_HYSYS_Amsim
 - AEA_HYSYS_Crude
 - AEA_HYSYS_Dynamic
 - AEA_HYSYS_Oil
 - AEA_HYSYS_OLGAS
 - AEA_HYSYS_Process**
 - AEA_ProFES_Wax
- win98test

Subnet Servers

Server information:

Server name: IP address:

Feature information:

Feature name: Version:

Statistics:

	In use:	Total:	Queued:
Total users:	<input type="text" value="0"/>	<input type="text" value="20"/>	<input type="text" value="0"/>
Reserved:	<input type="text" value="0"/>	<input type="text" value="19"/>	<input type="text"/>
Commuter:	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text"/>

Redundant: Number of servers:

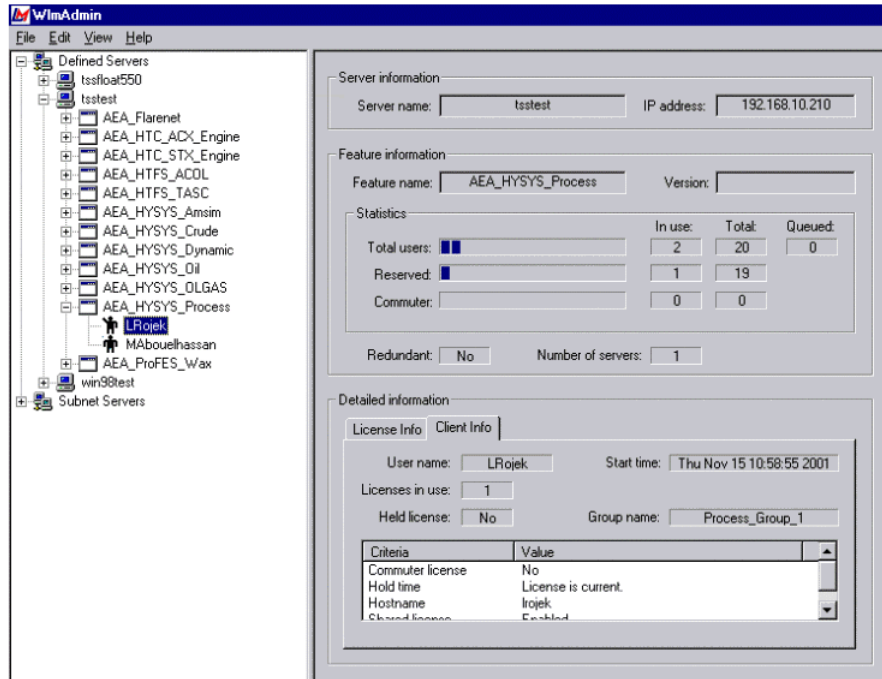
Detailed information:

License Info | Client Info

License type: Start date:

Allow commuter license: End date:

Criteria	Value
Additive license	No
Check time tamper	Yes
Hold time	0 secs
Holding criteria	None
Key lifetime	300 secs



WLMAdmin Menu Bar Options

The following table describes the commands available in the WLMAdmin menu bar.

Menu-Command	Description
File-Exit	Exits the WLMAdmin application and closes the WLMAdmin view.
Edit-Defined Server List	Adds/removes/changes server information in the defined server list.
Edit-Reservation File	This option will start the Group Reservation Editor (if available); reservation files can also be edited using a standard text editor. See “Setting the Group Reservations” on page 2-13 for more details on making reservations.
Edit-Redundant License File	This option will start the WRLFTool (if available).
Edit-Preferences	Preferences set how license server queries will be done; further details follow.
View-Status Bar	Displays or hides the status bar of the WLMAdmin application. Checkmark indicates the status bar is displayed. No checkmark indicates the status bar is hidden.
View-Refresh All	Updates licensing information for all servers currently displayed in the Navigation pane.
Help-About WlmAdmin	Displays the version number of the active WLMAdmin application.

Log Files

The Software License Manager can be configured (via administrator options) to capture the usage for all of the Aspen Engineering Suite products in a log file. For each product that is opened, the appropriate token level is checked-out and the amount of time the product is being used (until the tokens are checked-in) is captured.

The information stored includes the User ID, machine name, date and time of each license taken and returned. The log file can be used to display historical information of the token and product usage for individual or all users. The log file has a maximum file size that is set by the administrator. The file is saved when it is full and a new file is automatically created.

The license server log file is set up using the LServOpts environment variable.

Checking the Client to Server Connection

Once you have confirmed that the proper license codes are in place, the next step is to check that your network computers points to your license server.

- 1** Double-click the **SLMConfigWizard.exe** file located in the SLM Client Tools directory when the SLM is installed.
The SLM Configuration view appears.
- 2** Click the **Next** button to see the **License Mode** page.
- 3** Click the **Next** button to see the **Network Access** page.
Confirm that the **Yes** radio button is selected on this page.
- 4** Click the **Next** button to see the **Server List** page.
- 5** Check the **Configured Servers** list for the correct license server name or IP address:
 - To add a server, type the IP address or the name of the server in the **Add Server** field and click the **Add** button.
 - To remove a server, select the server you want to remove from the **Configured Servers** list and click the **Remove** button.
- 6** To exit the SLM Configuration Wizard do one of the following:
 - If the list contains the correct license servers and you have not made any changes to the SLM Configuration Wizard settings, you can exit the SLM Configuration Wizard by clicking the **Cancel** button.
 - If you made any changes in the SLM Configuration Wizard, keep clicking the **Next** button until you reach the **Finished** page. Click the **Finish** button to save the changes and exit the SLM Configuration Wizard.

Note: To check if the LSHost environment variable is pointing to the correct server, refer to the section “Network Problems” on page 10-4.

Advanced Licensing Functions

Network licenses allow the administrator access to many advanced licensing functions. These are primarily:

- Directing User License Requests to Preferred License Server(s). Refer to the section “Server List” on page 5-3.
- Reserving Licenses for Particular Users/Excluding Particular Users from License Access. Refer to the section “Group Reservations” on page 6-4.
- Ability to Commute License for use when no network connection to a license server is available.*

* Optional feature at additional cost; for more information contact your AspenTech sales representative.

These functions are enabled through the use of options and license tools which are explained in detail in the following sections.

SLM Client Tools

The SLM Client Tools are SLM applications used to configure the user/client computer.

LSMon

LSMon is a command line utility that retrieves information about all features currently licensed by the license server and the clients using those features. The option **Server-host** allows you to specify the name of the computer on which the license server is running.

If Server-host is omitted, LSMon will attempt to talk to the license server on the computer indicated in the LSHost environment variable, LSHost file, or registry key. If the variable, file, or key does not exist, then LSMon will attempt to contact a license server using the broadcast mechanism. If LSMon fails to find a license server, you will receive an error message and the utility will exit.

If ‘no-net’ is given as the server-host, LSMon will search the local machine for commuted licenses.

LSWhere

LSWhere is a command line utility used to display the network names of the computers running the license server. By default the address of the computer that the license server is running, as well as its host name, is displayed. You can specify the following options:

Option	Description
-d	Displays details on the license servers found on the network. This is the default setting.
-r	Displays just the IP or IPX addresses of the license servers found on the network.

SLM Admin Tools

The SLM Admin tools are SLM applications used to configure the server computer.

LServOpts

The LServOpts variable is used to set network license server options.

Note: This variable is set as a system variable and not a local user environment variable.

Note: Some of the options that can be set with LServOpts can also be set with a specific environment variable (which is recommended whenever possible).

Configuring the LServOpts

If you choose to set any environment variables, and you are unfamiliar with the system tools for Windows 2000, use the following steps:

- 1 On your computer, click the **Start** menu. Select **Settings**, and then select **Control Panel**.
- 2 Double-click on the **System** icon to open the System Properties view.
- 3 Click the **Advanced** tab and click the **Environment Variables** button. The Environment Variables view appears.
- 4 In the System Variables group, click the **New** button. The New System Variable view appears.
- 5 In the **Variable Name** field, type **LServOpts**.

- 6 In the **Variable Value** field, type the value for the variable.
- 7 Click the **OK** button to close the New System Variable view and add the new variable in the System Variables group.
- 8 If you do not need to set any more variables, click the **OK** buttons on the Environment Variables and System Properties views to close both views.

Tip: Reboot the computer to make sure these environment variables take effect.

The following table describes the variable options:

Option	Description
-s license file	Specifies the name and location of the license code file. By default, the license server uses the file, lservrc , in the local directory. This can also be specified with the LServrc environment variable.
-e license configuration file	Specifies the name and location of the optional license configuration file. This can also be specified with the LServrcCNF environment variable.
-l usage log file	Enables usage logging by specifying the name and location of the usage log file (you can <i>not</i> include any spaces in the path name). A typical log file name is lserv.log . (This is limited to 8 characters.) By default, usage logging is disabled.
-z usage log file size	Specifies the maximum size of the usage file. The default value for the maximum size of the log file is 1 megabyte. The size can be specified in bytes, kilobytes, or megabytes. For example, -z 2000 means 2000 bytes, -z 2k means 2 kilobytes and -z 2m means 2 megabytes. Once the maximum size of the file is reached, the license server creates a backup log file (unless the -x option has been used). The maximum number of backup files is 99. However you can move existing backup log files to another directory and the license server begins logging again.
-x	By default—on overflow of the usage log file—the file contents are moved in to a backup file. New usage records are then written to the original file until it overflows again. If the -x option is specified, the file will <i>not</i> be backed up on overflow. Instead the license server will simply stop writing further records to the file.

Option	Description
-com percentage	Commuter licensing uses the same license codes as other network licenses. To ensure that not all license codes are used up by the commuter, set this option to the percentage of license codes you want used for commuter licensing. Once that percentage of codes are used up, no more will be made available to commuters until commuter licenses are returned.
-lfe encryption level	<p>Specifies the level of encryption that license transactions are written to in the licenses server log file. The levels are 1 to 4:</p> <ul style="list-style-type: none"> • 1 - No encryption. • 2 - No encryption. Transaction data is readable, but tampering with or deleting an entry is detected by LSUsage. This is the default encryption level. • 3 - Encrypt usage only. Transaction data is readable except for license usage data. Such entries are not displayed by LSUsage. • 4 - Encrypt entire record. All transaction data for the license code is encrypted. Such entries are not displayed by LSUsage. <p>Level 2 is recommended. If contract requires log files to be sent to AspenTech, level 2 must be used.</p>
-f error file	Specifies the name and location of the error file where the license server logs occurrences of unexpected conditions. By default, this is disabled until the option is specified. Then the license server appends the lserv.log file in the current directory.
-u group reservations file	Specifies the name and location of the optional group reservations file. By default, the license server uses the LSReserv file in the current directory. This can also be specified by the LSReserv environment variable.

LSUsage

LSUsage is a command line utility that displays a summary of application usage, providing information on license transactions contained in the license server usage file. At the command line, type the name and path of the LSUsage logfile.

The LSUsage log file displays the following information:

Element	Description
Feature name/Version	Identifies the license for which this entry was made.
%age Denied	The percentage of requests for this license that were denied (usually because the hard limit of the license had already been reached).
%age Issued	The percentage of requests for this license that were granted.
Ttl Keys Issued	The number of licenses for this license that were issued.
%age Queued granted	The percentage of queued license requests that were granted.
%age Qreq.	The percentage of license requests that were placed in the license queue. (License requests are queued only if license queuing is enabled for this license.)
Min. App. Duration	The minimum number of minutes the application for this license was in use.
Avg. App. Duration	The average number of minutes the application for this license was in use.
Max. App. Duration	The maximum number of minutes the application for this license was in use.
LOG REPORT FOR Sessions: x	The session numbers for this license server that were logged in this file.

Transferring the Usage Log Files

SLM provides three tools used to transfer the usage log file that is generated while SLM is being used. Each tool uses a different network protocol for sending in the file.

Tool	Description
FTPExport	Uses the File Transfer Protocol (FTP) to send the file from a workstation to a FTP server.
SLMUpload	Uses the Hyper Text Transfer Protocol (http) to transfer files from a web server onto a browser.
SMTPSend	Uses the Simple Mail Transfer Protocol (smtp) to transfer the file by email messages between servers.

Commuted Licenses

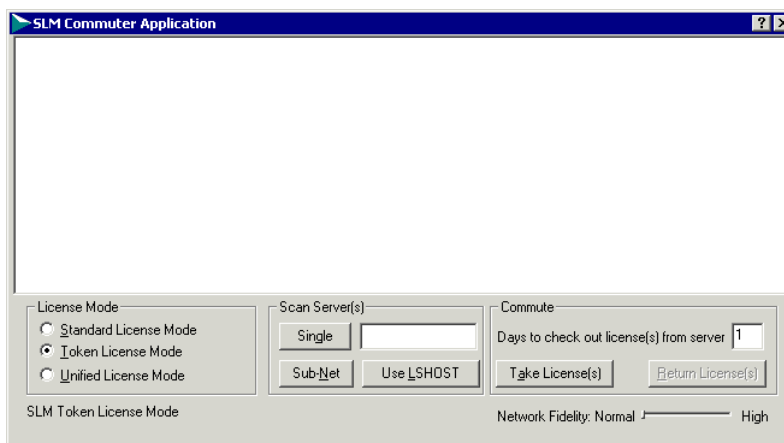
SLMCommute is a utility used to borrow licenses from a network server. These borrowed, or commuted, licenses will allow a client computer to run the AES product while disconnected from the network without the use of a SLM dongle.

Note: You must run SLMCommute when the user is connected to the License Server network to obtain and verify the licenses required.

The Commuted time is specified in days, with a maximum of 30 days. The licenses can be returned prior to their expiration date. In order to successfully commute a license, the commutable feature must be activated in the license file.

Checking out the Commuter Licenses

- 1 Ensure you have an AES product open before you commute, otherwise the commuting facility can take a long time to start up.
- 2 Run the commute program by selecting **Start | Programs | AspenTech | SLMCommute** command from the desktop menu. The SLM Commuter Application view appears:



The above view shows several options:

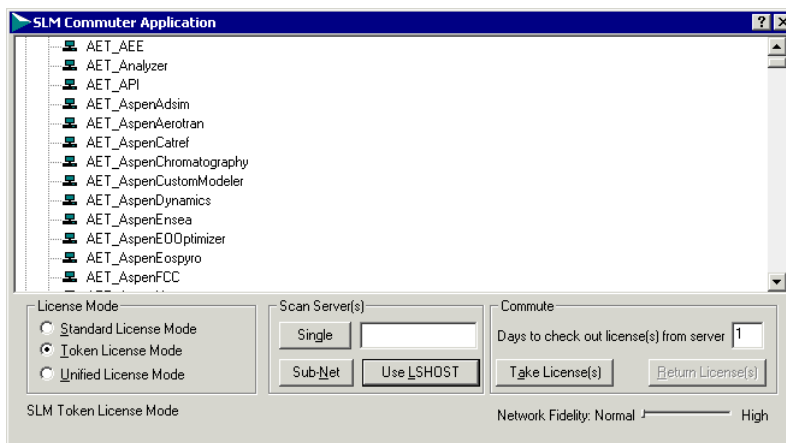
Commuter Option	Description
License Mode	Defaults to your company's license mode (Standard, Token, or Unified).
Single	Server searches for and displays a specified license server. Requires you to specify the license server's computer hostname, IP address, or IPX address in the field provided.
Sub-Net	Searches for and displays all of the license servers on your subnet.

Commuter Option	Description
Use LSHOST	Reads the LSHost file and displays the servers available.
Take License(s)	Checks out the licenses selected.

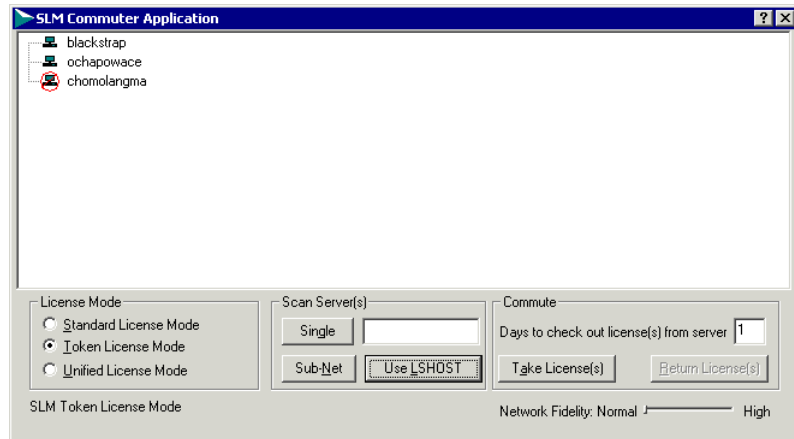
- 3 When the program loads you can perform one of the following:
- Type the Server Name or IP Address. After typing the IP address click on the **Single** button.
 - Click the **Use LSHOST** button (we recommended you use this button as you do not need to remember the server names or IP addresses). From the list that appears click on the server located closest to you (as per the IP address list / server name given below). If for some reason the chosen server is not responding just click an alternative server.

Important: Make a note of the server you are using; you will need to return the commuted licenses to the same server.

- 4 Once the server has been located, all the available commuter licenses are listed. The license list may take some time to display:




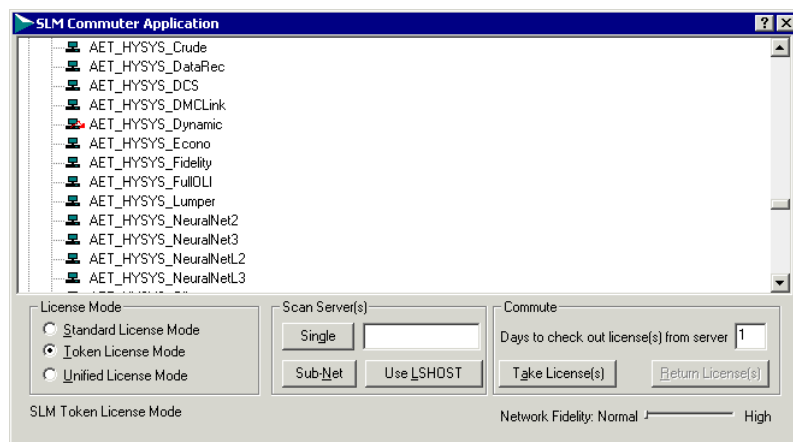
- If the licenses are not all listed, then it is possible the application has timed out. In this case, you can use the network fidelity slider bar to improve matters. Move the slider bar towards the right side and retry the application. This setting determines the number of retries. The further towards the right side, the slower the application will perform, but SLMCommute may be more successful in retrieving all the licenses.
- If any of the servers are unavailable they will appear with a red crossed icon as shown in the figure below for the **chomolangma** server.




Note: It is recommended that you choose only the licenses you will need.

For example, if you are commuting licenses for HYSYS and are unsure of which licenses you will need to run your case, you can use a capability in HYSYS to display the licenses that are in use in the case that is loaded. In HYSYS, select **Simulation | Main Properties** from the menu bar, and click the **Licenses** tab.

- 5 Choose the number of days you require the license(s).
The number of days can be any integer value from **1** to **30**.
- 6 Click on the **Take License(s)** button and the license is temporarily released from the server to your hard drive. You will notice that the license icon  changes for the licenses you have commuted.



- 7 Close the program by clicking on the **Close** icon .

You can now run your AES product away from the network.

Your license will automatically expire at midnight on the last day of your license period. If you return to the network, you can return the license to the network before the expiry date using SLMCommute.

Returning the Commuter Licenses


It is recommended to return Commuter licenses as soon as you reconnect to the network after your period away.

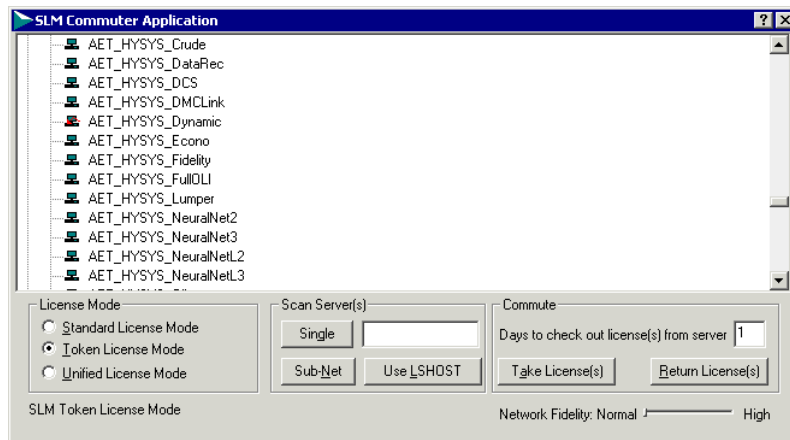
You can only have one instance of commuting per computer, so if you need additional licenses you will need to return all the licenses you currently have commuted, and then re-check out with all the licenses you require.


- 1 Run the commute program by selecting **Start | Programs | AspenTech | SLMCommute** command from the desktop menu.

Do one of the following:

- Type the Server Name/IP address, and click the **Single** button.
- Click the **Use LSHOST** button (recommended), and click on the required server that you originally took the licenses from.

- 2 To return the commuted licenses (indicated by the commute icon ) , click on one of the icons of the licenses you will be returning and you will notice that a red arrow appears pointing back towards the network. You will check back ALL the licenses you commuted originally.



- 3 Click the **Return License(s)** button and all the licenses will be returned and the icon (s) will return to the original network icon .

When you return licenses, if you want to keep a selection of the licenses commuted you will have to re-commute them.

Administration

On the SLM Commuter Application view, the **Use LSHost** button will access the registry key, LSHOST file or environment variable in the folder containing SLMCommute.exe to determine the servers to access. The registry key settings takes precedence over the LSHOST file, and the LSHOST file settings takes precedence over the environment variable, if all three settings exist.

The license mode will default to Standard, unless the registry key LicenseMode is set to 1 or 2. At 1, the license mode will default to SLM Token. At 2, the license mode will default to Unified.

Any attempt to access a license server using the opposite license mode of the selected one (in other words, the Token SLMCommute accessing a Standard licenses server) will give the following error:



Recommended Practices

To maximize the efficiency of your network licenses when commuting:

- Do not take any more licenses than you need.
- Only take the licenses for the period that you require.
- Always check licenses back in when you reconnect to the network.
- Make a note of the server names or IP addresses.

Tip: If you find SLMCommute is slow, open the AES product before running SLMCommute.

Note: When you return a license, you will also return ALL other licenses commuted with that particular license.

License & Product Names

The user needs to be familiar with the list of licenses that their AES product uses, in order to commute the correct licenses when the AES product is used offline. Refer to the section “List of Licensed Programs” on page 2-15 for the list of licenses and related AES products.

Note: AspenTech can provide an updated list that includes all the products available on your Token license server.

Automatically Returning the Commuter Licenses

The CommuteManager is a command-line application optionally available, which can be used to view commuted licenses currently residing on a computer when the user connects back to the network. It can be used to remind the user that they have commuted licenses or to automatically return commuted licenses from the computer back to the server.

The program is also used to troubleshoot machines on which commuting is not working and to return licenses prior to an upgrade.

Commuting the Licenses from a Remote Location

As long as you can communicate with the License Server, you can commute licenses from that server. Any program that allows remote access to your home network can be used.

Note: Commuting from a remote location requires a very stable connection. If the connection is lost at any time during a commuter transaction when taking or returning licenses, the commuted license may become corrupted on either your workstation or the license server.

Stopping or Changing the License Server

If there is no substantial change to the license server (such as, unrecoverable hardware failure, reformat of hard drive, installation of a new operating system), stopping and restarting the SentinelLM service (including powering down and restarting the machine), has no effect on actively commuted licenses.

Any addition or upgrade to a license file (for example, change in expiry date) has no effect on commuted licenses. However, if there are actively commuted licenses and a fundamental characteristic (for example, the number of tokens it requires) of a license is changed on the server, it is possible that the commuted license will not return itself properly. In this case it is left to expire.

Note: It is recommended that commuted licenses are returned before an upgrade to the license server program.

SLM Configuration Wizard

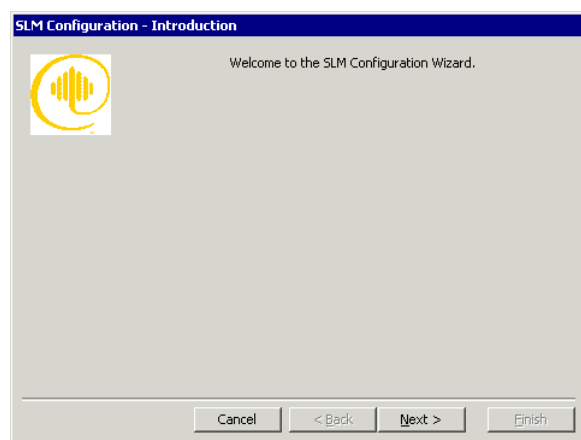
Configuring the SLM

SLM Configuration Wizard is a user-friendly front end tool used to set the relevant keys in the registry to the user-specified values.

Accessing the SLM Configuration Wizard

To start the SLM Configuration Wizard, do one of the following:

- Double-click the **SLMConfigWizard.exe** file located in the SLM Client Tools directory when the SLM is installed.
- Click the **Start** menu on the Windows desktop, and select **Programs | AspenTech | SLM Configuration Wizard**.



When the SLM Configuration Wizard starts, it reads the current settings that already exist in the registry. If these settings do not exist, they are set to the default, or in some cases, left blank.

Navigating Through the SLM Configuration Wizard

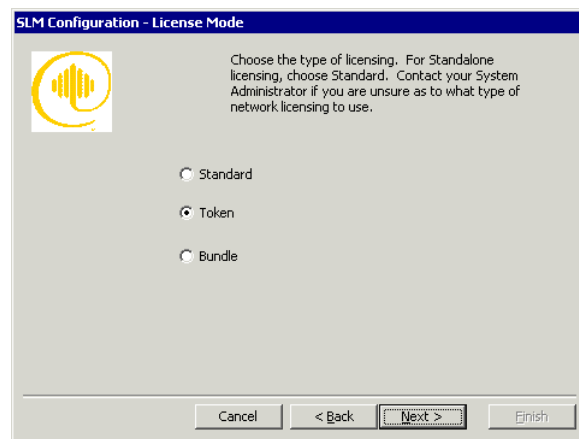
The SLM Configuration Wizard takes you step-by-step through a list of options that help you set up the registry configuration:

- To navigate forward to the next set of options, click the **Next** button.
- To return to the previous options, click the **Back** button.
- To exit the SLM Configuration Wizard without making any changes to the registry, click the **Cancel** button anytime before the **Finish** button.

License Mode

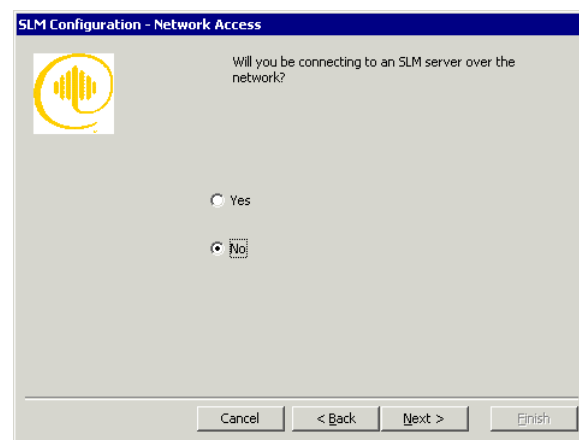
You can select the type of licensing to use in the **License Mode** page. There are three radio buttons available:

- Standard (Standalone or standard Network licensing)
- Token
- Bundle is used for all Unified licenses, including Standard and Token licenses with the SLM (Software License Manager) prefix.



Network Access

The Network Access page allows you to control the network access to the license servers.



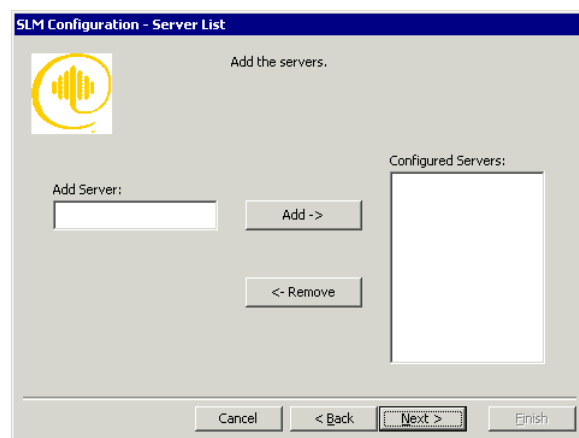
If you want to set the registry to look for license servers on the network, click **Yes**. SLM attempts to find the license on the local machine first. If the license is not found, SLM broadcasts on the network for a license server and takes the license from there.

If you want to set the application to look for a license in the local machine only, click **No**. If SLM does not find the license in the local machine, the application fails to run without looking for a license on the network.

Server List

You can specify the servers that SLM can search for licenses. When you specify the servers, SLM checks the specified list before it broadcasts the entire network for random license servers.

Tip: You can skip this page and leave it blank if you clicked **No** on the **Network Access** page.



The servers in the Configured Servers list are added as keys in the registry. Each key contains the information of a license server name.

Note: If your computer contains both the registry and the LSHOST environment variable configurations, SLM searches for the variables in the registry first. If SLM finds a valid license server in the registry, the LSFORCEHOST and LSHOST environment variables are ignored.

To add a server to the Configured Servers list:

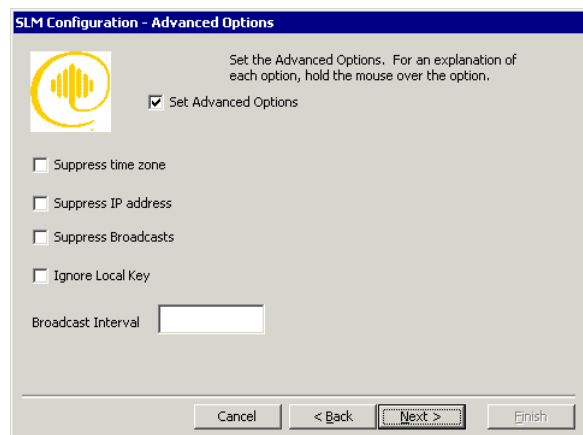
- 1 In the **Add Server** field, type the IP address or the name of the server.
- 2 Click the **Add** button. The new IP address or server name appears in the **Configured Servers** list.

To remove a server from the Configured Servers list:

- 1 In the **Configured Servers** list, select the server you want to remove.
- 2 Click the **Remove** button. The selected server is removed from the **Configured Servers** list.

Advanced Options

The Advanced Options page allows you to configure advanced features available in the SLM.



If you want to configure the license log file options, select the **Advanced Options** check box which enables all the options.

Note: The Suppress Time Zone and Suppress IP Address options will only be effective for clients who have "SLM Project Tracking" enabled.

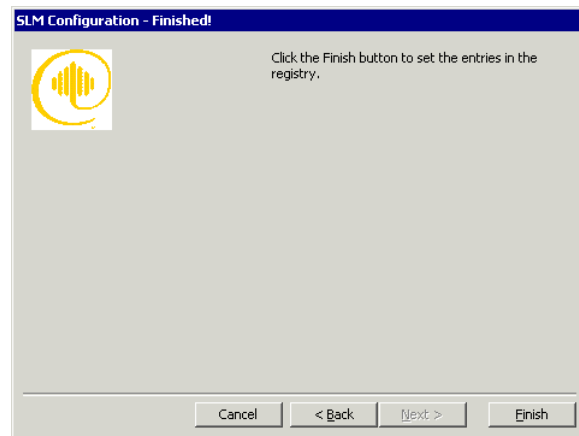
The following table describes each option:

Advanced Options	Description
Suppress Time Zone	When you select this check box, the time zone information does not get stored in the log files. When this check box is unchecked, the time zone information is stored in each entry of the log files.
Suppress IP Address	You can select this check box to turn off IP tracking in the log files.
Suppress Broadcasts	If you only want to go to one specific server for a license, select this check box. This option suppresses the network broadcasts for license servers and limits the amount of network traffic to a bare minimum.

Advanced Options	Description
Ignore Local Key	<p>When SLM searches to check out a license, SLM checks the local machine for an SLM dongle and license file first. When you select this check box, SLM ignores the SLM dongle and license file on the local machine and searches the network for a license server.</p> <p>You can use the Ignore Local Key flag when other hardware devices are plugged into the USB ports. The default setting instructs SLM to search the USB ports for an SLM dongle, which may cause behavior modifications in the hardware devices. You can avoid hardware conflicts by selecting the Ignore Local Key check box.</p>
Broadcast Interval	<p>The broadcast interval is an integer in the range of zero to 65535 that notifies SLM how long to wait in between server broadcasts. This integer represents the number of minutes.</p> <p>This option is useful for network administrators:</p> <ul style="list-style-type: none"> • They can set the value to a very high number in order to reduce the network traffic they see on the system. • They can set the value to a very low number, so that new servers when brought up on the network would be picked up as soon as possible. <p>For example, the broadcast interval was set to a week. If a new license server was started right after the last network broadcast for servers, it would take the system a week to see the new server for which that server would be sitting idle for that week. Not really an ideal situation. So the network administrator can set this value to a low value, and the license server would be picked up sooner.</p> <p>When the broadcast interval is set at a low value, the amount of network traffic will increase.</p>
<p>Note: It is recommended that the Broadcast Interval value be changed only if the administrator notices issues on their system.</p>	

Finished

Once you have specified the SLM configurations, the **Finish** button is enabled. You can click the **Finish** button to save all the keys and their corresponding values into the registry.



Tip: To exit the SLM Configuration Wizard without making any changes to the registry, click the **Cancel** button.

The view shown below appears after clicking the **Finish** button.



Note: If you have any problem with the SLM Configuration Wizard, please contact your local AspenTech Technical Support center.

Setting User Options

SLM also contains other options that are set by using specific configuration files: User Alerts and Group Reservations.

User Alerts

Alerts let you know about certain license events. There are seven alert types that can be generated using two different reporting types.

Configuring the User Alerts

To enable alerts, you need a configuration file with information on the license codes in the license code file. The configuration file, **lservrc.cnf**, is a general purpose configuration file associated with a particular license file.

The LServrcCNF environment variable can be used to set the name and location of the network license server configuration file. This file is used in setting up user alerts and other options. If LServrcCNF is not used to specify the configuration file, then the configuration file resides in the same directory as the license code file and has the same base name as the license code file but with the extension *.cnf.

It is recommended that the default name and location are used for this file.

Configuring the LServrcCNF Environment Variable




System icon

To configure the LServrcCNF environment variable:

- 1** On your computer, click the **Start** menu. Select **Settings | Control Panel** command.
- 2** Double-click on the **System** icon to open the **System Properties** view.
- 3** Click the **Advanced** tab and click the **Environment Variables** button. The Environment Variables view appears.
- 4** In the System Variables group, click the **New** button. The New System Variable view appears.

- 5 In the **Variable Name** field, type the name of the environment variable as **LServrcCNF**.
- 6 In the **Variable Value** field, type the file directory/location for the *.cnf file.



Variable Name:	LSERVRCNF
Variable Value:	C:\LS_Files\NETWORK.CNF

- 7 Click the **OK** button. The New System Variable view closes and the new variable and value is added in the Environment Variables view.
- 8 If you do not need to set any more variables, click the **OK** button to close the Environment Variables view and exit the System Properties.

Tip: Reboot the computer to make sure these environment variables take effect.

Defining the Alert Types

Each alert action has the following format:

```
<alert-type> = <reporting-type1> ON/OFF <reporting-type2>  
ON/OFF
```

where alert-type can be:

- **hardlimit**. Hardlimit exceeded.
- **appstart**. License issued.
- **appstop**. License returned.
- **denied**. License denied.
- **apptimeout**. License time-out.
- **expired**. License expiration date.

and reporting type can be:

- **email**. E-mail will be sent to recipients given after EMAIL=.

Note: Line continuation is not supported, so all e-mail addresses must fit on one line. Maximum length of line is 512 characters.

- **script**. The script given after SCRIPT= will be invoked.

In order to use e-mail alert, you must configure the license server using lsmail.exe.

You must configure the Sentinel Server 7.2 to automatically install lsmail.exe. The default location for lsmail.exe is:

```
C:\Program Files\Rainbow Technology\SentinelLM 7.2  
Server\English
```

Run the lsmail.exe application. At the prompt, type the host name or IP address of an MS Exchange server.

This is an sample configuration file of 'lservc.cnf', normally placed in the directory where the license server is installed:

```
[AEA_HYSYS_Process *]
softlimit = SCRIPT OFF EMAIL OFF
hardlimit = SCRIPT OFF EMAIL OFF
appstart = SCRIPT OFF EMAIL OFF
appstop = SCRIPT OFF EMAIL OFF
denied = SCRIPT OFF EMAIL ON
apptimeout = SCRIPT OFF EMAIL OFF
expired = SCRIPT OFF EMAIL OFF
EMAIL= Administrator@hyprotech.com
[AEA_HYSYS_Dynamic *]
softlimit = SCRIPT OFF EMAIL OFF
hardlimit = SCRIPT OFF EMAIL OFF
appstart = SCRIPT OFF EMAIL OFF
appstop = SCRIPT OFF EMAIL OFF
denied = SCRIPT OFF EMAIL ON
apptimeout = SCRIPT OFF EMAIL ON
expired = SCRIPT OFF EMAIL OFF
EMAIL=Administrator@hyprotech.com
[* *]
softlimit = SCRIPT OFF EMAIL ON
hardlimit = SCRIPT OFF EMAIL OFF
appstart = SCRIPT OFF EMAIL OFF
appstop = SCRIPT OFF EMAIL OFF
denied = SCRIPT OFF EMAIL OFF
apptimeout = SCRIPT OFF EMAIL OFF
expired = SCRIPT OFF EMAIL OFF
EMAIL=Administrator@hyprotech.com
```

This configuration file requests the license server to send an e-mail through lsmail.exe if:

- a license is denied for HYSYS or HYSYS Dynamics.
- a license times out for HYSYS Dynamics.
- the softlimit is exceeded for all the features available in the license file ([* *]).

Group Reservations

Group reservations allow you to associate user groups with each feature; each of these user groups is then reserved in a pool containing a certain number of licenses for that feature. Any licenses not specifically reserved fall in the general pool.

A group specification consists of the following:

- Name of the feature for which the reservation applies.
- Name of the group.
- Number of licenses reserved for that group.
- Login names of users/host IDs of computers belonging to that group.

The groups must be mutually exclusive. Different groups for the same feature can not have common users or computers. The number of licenses reserved for a feature cannot exceed the number of concurrent copies specified in the license code for that feature.

When the license server receives a request, it checks whether the user making the request belongs to a group. If so—and licenses are available for that group—the license server issues the license(s) and removes it from that group's pool. Otherwise, the requests are serviced with licenses from the general pool until no licenses are available.

Configuring a Group Reservation File

Group reservation information is normally held in a text file called `lsreserv` (no extension). By default, this file is placed in the Sentinel server directory:

```
C:\Program Files\Rainbow Technologies\SentinelLM 7.2  
Server\English
```

This is the same location as the server program (usually `lservnt.exe`) and the license file (`lservrc`).

Tip: If desired, the `LSReserv` environment variable can be used to set a different file name or path to the reservation file. Refer to “Environment Variables” on page 10-13 for more information about environment variables.

Group reservations are entered according to the following format, with one group per line:

```
feature_name[ ,ver  
]:group_name:num_of_licenses:{user_name | computer}
```

One or more user names and/or computers name can be specified, but at least one value must be specified in the last field. User and computer names must be separated by a space. The version number is optional.

Note: SentinelLM 7.2 is not case sensitive. So the reservation specifications (for example, License Feature Name, User Name, and Computer Name) are no longer case sensitive.

Sample Group Reservation File:

```
## This is a sample Group Reservation file
## File name: lsreserv
## In this sample there are 3 Dynamics licenses being reserved for
## the user group Dynamics_Experts which contains 4 individuals;
## if there are more than 3 Dynamics licenses available
## on the server the remainder will be available for general use.
## Additionally anyone logging in to the computer named "Control"
## may access Dynamics. Michael is not allowed to access Dynamics
## at all (even via "Control").
AEA_HYSYS_Dynamics:Dynamics_Experts:3:Bob John Mary Doug $Control
!Michael
```

Note: The characters \$ and ! have special meaning. \$ indicates the name is a computer name, and ! indicates a logical NOT.

Excluding the Users/Computers from Using a Feature

Specifying a user/computer in a group using the logical NOT (!) will exclude that user/computer from any use of that feature. This means that the user/computer will be prevented from using that feature even if there are licenses available in the general pool.

Using Standard Licenses

Standard licenses are based on setting a specific limit of users who are licensed to use a certain AES product. In Standard licenses, one license is consumed per feature, decreasing the available licenses for that feature by one.

For example, a customer with 10 network licenses for AES product A, and five network licenses for AES product B, can simultaneously run up to 10 copies of AES product A and up to five copies of AES product B. When a user closes a copy of the AES product, the license is released back to the license server allowing other users access to that AES product.

Key Concepts

- All licenses for a given product are pulled from a common pool.
- A limited number of licenses can be used simultaneously.

License Modes

Standard licenses can be configured in Standalone mode, Network mode, or Network and Standalone modes.

- Standalone mode is configured so that both the AES product and the licenses are installed on a single computer. This kind of configuration is most often used when the AES product is only used by one individual on a particular computer.
- Network mode is configured so the AES product is executed on your computer, but the licenses are installed on a network license server so they can be shared with other users.

The license server consists of a file of network license codes and the license server application. The license server is used to issue the license codes to all users on the network.

- Mixed mode is an alternate configuration where the standalone mode is installed on the user's computer, network mode is installed on the network license server, and the user's computer is connected to the network.

When SLM checks for licenses, SLM starts with the user's computer for standalone mode licenses first, and if the licenses are not found or the local security SLM dongle is not installed, SLM searches for an available network mode licenses.

Note: SLM always searches for a standalone license first. If a standalone license is not found, SLM searches for an available network license.

Configuring the Standard Licenses

You can configure the Standard licenses using the SLM Configuration Wizard.

- 1 Click the **Start** menu on the Windows desktop, and select **Programs | AspenTech | SLM Configuration Wizard**. The SLM Configuration view appears.
- 2 In the SLM Configuration view, click **Next**.
- 3 In the **License Mode** page, click **Standard** and click **Next**.

Note: If the licenses start with SLM, then **Bundle** must be selected.

- 4 In the **Network Access** page, click the **Yes** or **No** radio button to configure SLM to search or ignore licenses on the network. Click **Next**.
- 5 In the **Server List** page, specify which network server the SLM checks for licenses:
 - To add a server, type the server's IP address or name in the **Add Server** field and click **Add**.
 - To remove a server, select the server's IP address or name from the **Configured Servers** list and click **Remove**.

Note: You can skip this page and leave it blank if you click **No** on the **Network Access** page.

- 6 Click **Next**.
- 7 In the **Advanced Options** page, select the **Set Advanced Options** check box if you want to configure the following SLM advanced options:

Advanced Options	Description
Suppress Time Zone	When you select this check box, the time zone information does not get stored in the log files. When this check box is unchecked, the time zone information is stored in each entry of the log file.
Suppress IP Address	You can select this check box to turn off IP tracking in the log files.
Suppress Broadcasts	If you only want to go to one specific server for a license, select this check box. This option suppresses the network broadcasts for license servers and limits the amount of network traffic to a bare minimum.

Advanced Options	Description
Ignore Local Key	<p>When SLM searches to check out a license, SLM checks the local machine for an SLM dongle and license file first. When you select this check box, SLM ignores the SLM dongle and license file on the local machine and searches the network for a license server.</p> <p>You can use the Ignore Local Key flag when other hardware devices are plugged into the USB ports. The default setting instructs SLM to search the USB ports for an SLM dongle, which may cause behavior modifications in the hardware devices. You can avoid hardware conflicts by selecting the Ignore Local Key check box.</p>
Broadcast Interval	<p>The broadcast interval is an integer in the range of zero to 65535 that notifies SLM how long to wait in between server broadcasts. This integer represents the number of minutes.</p>

Note: The Suppress Time Zone and Suppress IP Address options will only be effective for clients who have "SLM Project Tracking" enabled.

Note: The Ignore Local Key and Broadcast Interval options will only be effective if the license file has **SLM_** prefix on the licenses.

8 Click **Next** and the **Finish** button is enabled.

Note:

To go back and make any changes, click the **Back** button.

To save the changes and exit the SLM Configuration Wizard, click the **Finish** button.

To exit the SLM Configuration without saving the changes, click the **Cancel** button.

9 You have now completed configuring the Standard licenses.

Using Bundle Licenses

A bundle is a single Standard license, which applies to all the products in the bundle. Similar to Standard licensing, the limiting factor on the use of the AES product is the user limit. Bundles also maintain the Standard licensing concept that all licenses are of equal value. The only difference between Bundle licensing and Standard licensing is that a single user, using any individual product can check out the Bundle license, and every additional product beyond the first does not require an additional license.

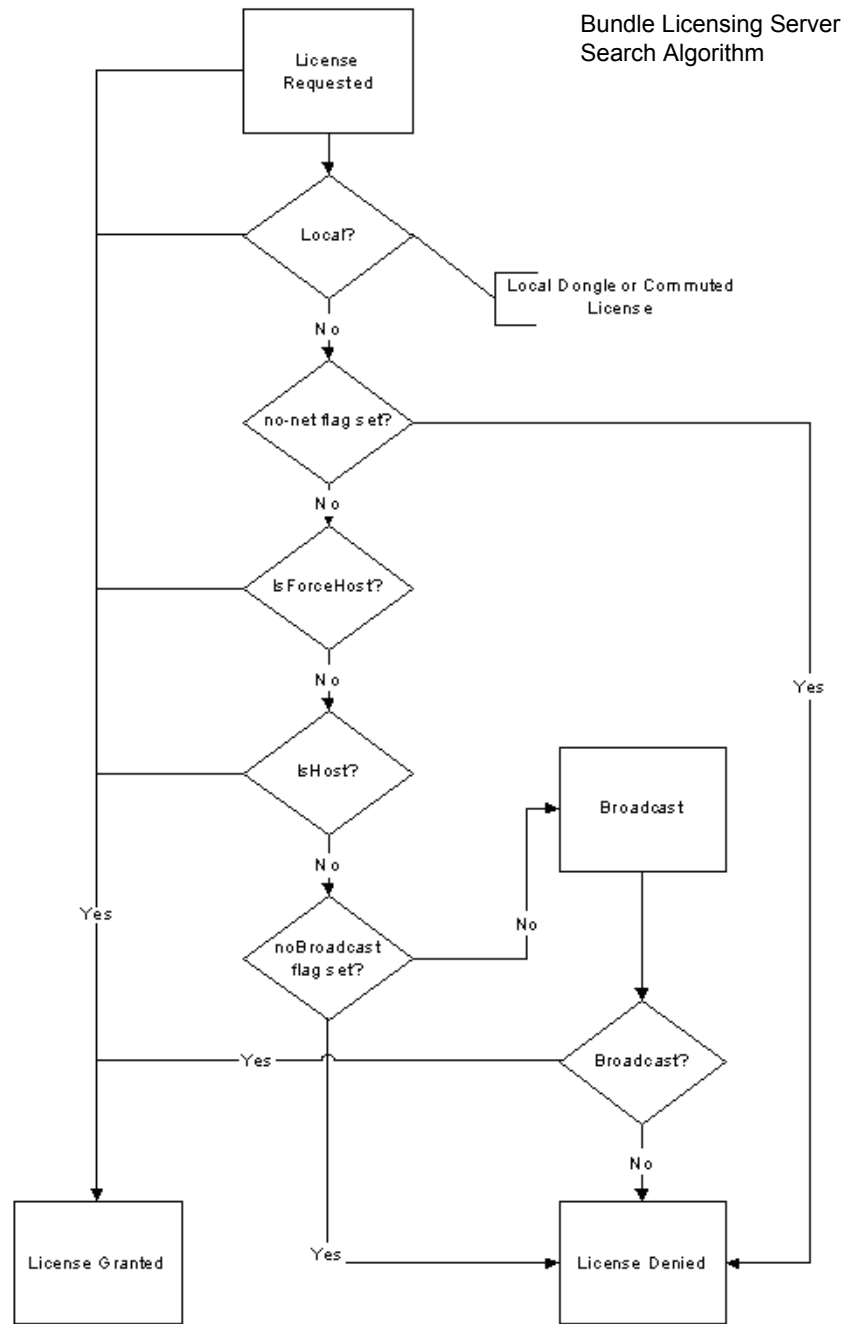
Key Concepts

- The bundle as a whole is limited to a certain number of users.
- Use of the bundle implies use of all products in the bundle.
- Each additional use of a specific product requires the use of another unit from the bundle.

When a user requests their first product license, a single suite license will be required. Every additional product license requested will consume zero pool licenses and will run by virtue of the fact that a single suite license is held.

For example, there are three users for the bundle, and four products (A,B,C,D) included in the bundle. If the first user starts product A and product B, the suite license count will equal one. If the second user starts product B and product C, the suite license count will equal two. If the third user starts product C and product D, the suite license count will equal three. If a fourth user tried to start product D, the license will be denied because the suite license count is equal to the number of suite users specified for the Bundle license.

When the license mode is set to Unified in the registry configurations, the Unified licensing server search algorithm is applied. This algorithm applies to all license modes.



Configuring the Bundle Licenses

You can configure the Unified licenses using the SLM Configuration Wizard.

- 1** Click the **Start** menu on the Windows desktop, and select **Programs | AspenTech | SLM Configuration Wizard**. The SLM Configuration view appears.
- 2** In the SLM Configuration view, click **Next**.
- 3** In the **License Mode** page, click **Bundle** and click **Next**.
- 4** In the **Network Access** page, click the **Yes** or **No** radio button to configure SLM to search or ignore licenses on the network. Click **Next**.
- 5** In the **Server List** page, specify which network server the SLM checks for licenses:
 - To add a server, type the server's IP address or name in the **Add Server** field and click **Add**.
 - To remove a server, select the server's IP address or name from the **Configured Servers** list and click **Remove**.

Note: You can skip this page and leave it blank if you click **No** on the **Network Access** page.

- 6** Click **Next**.
- 7** In the **Advanced Options** page, select the **Set Advanced Options** check box if you want to configure the following SLM advanced options:

Advanced Options	Description
Suppress Time Zone	When you select this check box, the time zone information does not get stored in the log files. When this check box is unchecked, the time zone information is stored in each entry of the log file.
Suppress IP Address	You can select this check box to turn off IP tracking in the log files.
Suppress Broadcasts	If you only want to go to one specific server for a license, select this check box. This option suppresses the network broadcasts for license servers and limits the amount of network traffic to a bare minimum.

Advanced Options	Description
Ignore Local Key	<p>When SLM searches to check out a license, SLM checks the local machine for an SLM dongle and license file first. When you select this check box, SLM ignores the SLM dongle and license file on the local machine and searches the network for a license server.</p> <p>You can use the Ignore Local Key flag when other hardware devices are plugged into the USB ports. The default setting instructs SLM to search the USB ports for an SLM dongle, which may cause behavior modifications in the hardware devices. You can avoid hardware conflicts by selecting the Ignore Local Key check box.</p>
Broadcast Interval	<p>The broadcast interval is an integer in the range of zero to 65535 that notifies SLM how long to wait in between server broadcasts. This integer represents the number of minutes.</p>

Note: The Suppress Time Zone and Suppress IP Address options will only be effective for clients who have "SLM Project Tracking" enabled.

Note: The Ignore Local Key and Broadcast Interval options will only be effective if the license file has **SLM_** prefix on the licenses.

8 Click **Next** and the **Finish** button is enabled.

Note:

To go back and make any changes, click the **Back** button.

To save the changes and exit the SLM Configuration Wizard, click the **Finish** button.

To exit the SLM Configuration without saving the changes, click the **Cancel** button.

9 You have now completed configuring the Unified licenses.

Using Token Licenses

An SLM Token can be thought of as a basic unit of currency (one dollar), and each Aspen Engineering Suite (AES) product in the Token system has a token value. When you run a product, the associated number of tokens are checked-out from the SLM Token pool contained on the Network License Server. The maximum number of tokens that can be checked out simultaneously is called the SLM Token limit. If all available tokens are in use and you try to open a product, then an error is generated and the product does not start. When you close a product, the tokens are checked back in to the Network License Server and the tokens are available for use. The SLM Token system is very flexible compared to Standard network licenses, because a SLM Token can be used generically for any product in any combination (as long as the SLM Token limit is not exceeded).

For example, a client has an SLM Token system in which product A and product B both have SLM Token values of five. If the SLM Token limit is 50, up to 10 copies of A or B can be run simultaneously or any combination in between (for example, nine A and one B, eight A and two B, and so forth).

Key Concepts

- Use of a product in the suite consumes a certain number of tokens.
- The Token suite is limited to a certain number of tokens that can be simultaneously consumed.

Features & Limitations of SLM Token

The following lists some of the basic features and limitations of the SLM Token system:

- Each product requires tokens to be used. In this way, you exchange tokens for services. Instead of paying for copies of the AES product, the customer pays for tokens.
- If there are insufficient tokens available for the product to be opened, then the client is denied access to the AES product.

How SLM Token Licenses Work

License Codes

SLM license codes are held in a license file. All license codes contain a lock code, start date, and end date. In order for the license to be valid, the following must be achieved:

- System clock must fall between the start and end dates.
- Hardware-locking device (parallel or USB port dongle) with matching lock code must be attached to the licensing computer.

Token license codes start with **AET** (Aspen Engineering Token) or **SLM** (Software License Manager), for example AET_HYSYS_Process. In addition to the Token license code, AEA__Token is used (where AEA is Aspen Engineering Application), this license code tracks the tokens in use and also defines any hard limit placed on the number of tokens available.

Accessing Licenses from a License Server

Licenses are checked out from the license server when a request is received from an SLM client. At periodic intervals, the SLM client asks the server to re-validate the licenses. Both the date and hard-lock device are checked each time when validating the license.

Token licenses are checked out and validated in a two-step process:

- 1 The descriptor **AET** license is checked out and validated.

Note: If tokens are used, LicenseMode registry key must be set on the client workstations.

To set the LicenseMode registry key, click **Token** in the **License Mode** page of the SLM Configuration Wizard.

- 2 Tokens are checked out and validated. When an **AET** license is checked out, an appropriate number of **AEA__Token** licenses are also checked out. When the **AET** licensed is returned, the **AEA__Token** licenses are also returned. For Unified licensing, **AEA__Pool** is used.

Standalone & Mixed Licensing Schemes

For SLM Token systems, the use of standalone SLM dongles are more restricted, since Standard license requests must be made when a standalone SLM dongle is in use and Token license requests when the Token License Server is in use.

You cannot use both Token licenses and Standalone licenses simultaneously. However, it is possible to toggle between the Standard and Token licensing modes by changing the license type.

Note: If all licenses are Unified, you can toggle between the Standard and Token licensing modes without changing the license type.

Changing the License Type using the SLM Configuration Wizard

- 1 Double-click the **SLMConfigWizard.exe** file located in the SLM Client Tools directory when the SLM is installed.
The SLM Configuration view appears.
- 2 Click the **Next** button to enter the **License Mode** page.
- 3 Set the type of license you want by clicking the **Standard**, **Token**, or **Bundle** radio button.
- 4 Click the **Next** button until you reach the **Finished** page.
- 5 Click the **Finish** button to save and apply the changes made.

Tip: Click the **Cancel** button to exit SLM Configuration Wizard without saving any of the changes.

Changing the License Type using the Environment Variables

Refer to section “Standalone & Mixed Licensing Schemes for Token” on page 10-17 for more information.

Requirements for a SLM Token

The SLM Token system requires a Token license file on the designated network license server and a registry key called LicenseMode with a value of 1 or 2 on the client workstation, depending on the type of licenses in the license file.

When the network license server is outside the user local area network, then it is recommended that an LSHost file or environment variable be used to tell the application to search for the Token server(s).

If a user needs to commute software (in other words, use an AES product temporarily away from the network), then the user requires a standalone program called **SLMCommute** installed on their personal computer. In addition, Windows 2000 and Windows XP users need full administration rights.

Configuring the Token Licenses

For a SLM Token system, a registry key or environment variable with a value of 1 or 2, depending on the type of licenses is required on the client workstation.

Note: If you have **SLM (Software License Manager)** licenses, instead of **AET (Aspen Engineering Token)** licenses, the LicenseMode (registry key) will have to be 2.

Configuring Token Licenses using the SLM Configuration Wizard

To configure the registry key using the SLM Configuration Wizard:

- 1 Click the **Start** menu on the Windows desktop, and select **Programs | AspenTech | SLM Configuration Wizard**. The SLM Configuration view appears.
- 2 On the SLM Configuration view, click **Next**.
- 3 In the **License Mode** page, click the **Token** radio button (to create the LicenseMode key and configure its value to 1). Click **Next**.

Note: Select **Bundle** for Unified licenses.

- 4 In the **Network Access** page, click the **Yes** radio button (to configure the SLM Token system to search the network for licenses). Click **Next**.
- 5 In the **Server List** page, add and/or remove servers for the Token network system:
 - To add a server, type the IP address or the name of the server in the **Add Server** field and click the **Add** button.
 - To remove a server, select the server you want to remove from the **Configured Servers** list and click the **Remove** button.
- 6 Click **Next**.
- 7 In the **Advanced Options** page, select the **Set Advanced Options** check box if you want to configure the following SLM advanced options:

Advanced Options	Description
Suppress Time Zone	When you select this check box, the time zone information does not get stored in the log files. When this check box is unchecked, the time zone information is stored in each entry of the log file.
Suppress IP Address	You can select this check box to turn off IP tracking in the log files.

Advanced Options	Description
Suppress Broadcasts	If you only want to go to one specific server for a license, select this check box. This option suppresses the network broadcasts for license servers and limits the amount of network traffic to a bare minimum.
Ignore Local Key	When SLM searches to check out a license, SLM checks the local machine for an SLM dongle and license file first. When you select this check box, SLM ignores the SLM dongle and license file on the local machine and searches the network for a license server. You can use the Ignore Local Key flag when other hardware devices are plugged into the USB ports. The default setting instructs SLM to search the USB ports for an SLM dongle, which may cause behavior modifications in the hardware devices. You can avoid hardware conflicts by selecting the Ignore Local Key check box.
Broadcast Interval	The broadcast interval is an integer in the range of zero to 65535 that notifies SLM how long to wait in between server broadcasts. This integer represents the number of minutes.

Note: The Suppress Time Zone and Suppress IP Address options will only be effective for clients who have "SLM Project Tracking" enabled.

Note: The Ignore Local Key and Broadcast Interval options will only be effective if the license file has **SLM_** prefix on the licenses.

8 Click **Next** and the **Finish** button is enabled.

Note:

To go back and make any changes, click the **Back** button.

To save the changes and exit the SLM Configuration Wizard, click the **Finish** button.

To exit the SLM Configuration without saving the changes, click the **Cancel** button.

9 You have now completed configuring the Token licenses.

Note: AspenTech recommends using the SLM Configuration Wizard for all license system configuration.

Configuring Token Licenses using Environment Variables

You can use the System Properties of the operating system to configure the environment variables. Refer to section “LicenseMode / AEATokenMode” on page 10-14 for more information.

Troubleshooting SLM Problems

Introduction

This chapter is designed to give you answers to some of the common problems encountered when setting up your licensing software. The common problems are grouped into the following sections:

- Dongle Problems
- Network Problems
- Environment Variables
- Common Error Messages

Please work through the following checklists if you encounter any problems.

Note: Additional troubleshooting information is available at <http://support.aspentech.com/>.

If you have gone through the checklist and you still have problems, contact your local technical support centre as outlined in the section “Technical Support” on page 1-1.

Before contacting Technical Support, please ensure that you have checked that your:

- 1** system clock is correct. Your licenses have a start date and end date. Your clock must be correct for the licenses to function.
- 2** SLM dongle can communicate with the SLM security software. (See section “SLM Echoid” on page 2-10). Your licenses are locked to the SLM dongle and will not function without access to the SLM dongle.
- 3** licenses are properly installed.

When contacting Technical Support, you will be asked to supply five pieces of information:

- 1** Product name(s) with which you are having problems (for example, HYSYS).
- 2** System Configuration:
 - Licensing scheme. Standalone, Standard network, Token network, or bundle network.
 - For Network licensing, whether the application is installed locally or on an application server.
- 3** An exact description of the error encountered, in other words:
 - What happened.
 - When did the error happen (during installation, startup, when opening a case, and so forth).
 - Most importantly, the specific text or screen shots (preferred) of the error message(s).

Note: The error message is the most important piece of information required to troubleshoot your problem.

- 4** A copy of your license file.
- 5** The SLM_Echoid.txt output file generated by running SLM Echoid on the computer to which the SLM dongle is attached.

To run SLM Echoid, double-click the SLM_Echoid.exe file located in the following directory:

C:\Program Files\Common Files\Hyprotech\SLM Client
Tools

The generated SLM_Echoid.txt file is located in the following directory:

C:\Program Files\Common Files\Hyprotech\SLM Client
Tools

Giving us this information will help us solve your problem faster.

Dongle Problems

If you run SLM Echoid, by double-click the SLM_Echoid.exe file located in the following directory:

C:\Program Files\Common Files\Hyprotech\SLM Client Tools

and no Sentinel Computer ID number and lock code appear, review the following:

Dongle Attachment

Check that the dongle is properly attached to the computer and run SLM Echoid again:

- Software License Manager (SLM) dongles are Sentinel SuperPro - Computer ID keys, manufactured by Rainbow Technologies. The SLM dongle is installed on the parallel port (printer port) or USB port of your computer with an arrow indicating which end is plugged in.

Note: Do not plug the parallel port dongle in the serial port, because it will damage your computer.

- Hyprotech green dongle is installed on either a 9-pin or 25-pin serial port of your computer. The arrow on the label of the green dongle must point towards the computer.

Note: Do not plug the serial port dongle in the parallel port, because it will damage your computer.

If your dongle is properly attached to the server and still no lock code is displayed, ensure that you have installed the Sentinel system drivers used by the server to communicate with the SLM dongle.

Install the drivers by running the **RainbowSSD5.39.2.exe** program from the Server\Driver folder of the AES product CD. This installation is silent (in other words, there will be no status messages). To check that the driver is installed, examine the program list in Add/Remove Programs view (open the view by selecting **Start | Settings | Control Panel | Add/Remove Programs**); you will see an entry for Sentinel System Driver.

Hyprotech Green Serial Port Dongles

If your Hyprotech green dongle is properly attached to the server and still no lock code is displayed, please ensure that the Hyprotech green dongle is connected to one of the following ports: COM1 to COM10.

If you still cannot communicate with your Hyprotech green dongle, then either the port is occupied by another program (for example, the Hot Sync Manager used by Personal Digital Assistants), or the dongle/

port is not functioning. To test if the port is working properly, try connecting a printer or other device to the port. If you do not have a device to attach to the port you can also try installing the Hyprotech green dongle on another computer.

Network Problems

If your license server cannot be located using the WLMAAdmin tool, then review the following checklist:

Check if you have installed the license server software on the server.

Use the following steps to double-check your actions while installing the license server:

- 1 Before installing the SLM License Server, shut down and uninstall the old network security server. Ensure that no users are logged in to the server.
- 2 Install the SLM dongle into the parallel port (printer port) or USB port of your computer with an arrow indicating which end is plugged in.

Note: Do not plug this dongle in the serial port because it will damage your computer.

- 3 Restart the computer.
- 4 Ensure that no Windows programs are running on the computer before starting the network license server installation process.
- 5 Insert the AES product CD in to the CD-ROM drive of the computer.

Note: For the computers which have the CD-ROM Autorun feature enabled, steps #6 and #7 are automatically performed. Some Aspen Engineering Suite products can have variants on the way the installation of Network License Server software is initiated.

- 6 From the **Start** menu, select **Run** command.
- 7 In the **Run** view, type: **d:\setup.exe** and click the **OK** button (where **d:** corresponds to the drive letter of the CD-ROM drive).
- 8 From the view that appears, click **Install SLM Server**.
- 9 A document explaining how to install the License Server will appear. Follow the instructions in the document.

Check if the SentinelLM service is running.

If the server is not running, start the server as described below:

- 1 Open your license tools folder:
C:\Program Files\Common Files\Hyprotech\SLM Client Tools\
- 2 Check communication with your SLM dongle by running SLM Echoid (double-click on **SLM_Echoid.exe** file).
- 3 When the SLM Echoid is activated, the SentinelLM Host Lock Code Information Utility view appears. This view displays the serial number and locking code of your IP Address, Disk ID, Host Name, Ethernet Address, and the Sentinel Computer ID number.
If your SLM dongle is properly attached to the server and still no lock code is displayed. Install the drivers by running the **RainbowSSD5.39.2.exe** program from the Server\Driver folder of the AES product CD. This installation is silent (in other words, there will be no status messages). To check that the driver is installed, examine the program list in Add/Remove Programs view (open the view by selecting **Start | Settings | Control Panel | Add/Remove Programs**); you will see an entry for Sentinel System Driver.
- 4 Check that the license server has been properly initialized by running the WLMAAdmin program and checking that the licenses are available.

Double-click on the WLMAAdmin application file, located in the following directory:

C:\Program Files\Common Files\Hyprotech\SLM Admin Tools

The WLMAAdmin view is split into two panes:

The Navigation pane is located on the left side of the view. It contains a tree structure that allows you to access the different levels of licensing information. There are two server lists available:

- **Defined Servers.** This is a user defined list of license servers. License information is updated quickly because WLMAAdmin is directed to a specific list of servers. This list will be empty when WLMAAdmin is first run. You can add servers to the defined server list using the Edit\Defined Server List menu item.
- **Subnet Servers.** This list will be filled after performing a network broadcast to locate all active license servers (in other words, computers running the SentinelLM service) on the network.

It can take some time to perform the network broadcast so we recommend that you generally use a defined server list.

Accessing license information via the subnet server list is useful

if you do not know the name of the license server from which you are accessing licenses.

Note: The Subnet Server option does not search across network Domains or your local Area Segment. So if your network server is located in a different office, WLMAdmin requires the Server name to be specified to browse license features.

The Information pane is located on the right side of the view. It displays varying amounts of information depending what level is highlighted in the Navigation pane.

Now that you have the proper license codes in place, the next step is to configure your network user computer to point to your license server. There are two ways to configure the server connection:

- SLM Configuration Wizard.
- Environment variables of the operating system.

Note: AspenTech recommends using the SLM Configuration Wizard to configure server connection(s).

Using the SLM Configuration Wizard:

- 1** Double-click the SLMConfigWizard.exe file located in the SLM Client Tools directory when the SLM is installed.
The SLM Configuration view appears.
- 2** Click the **Next** button.
- 3** In the **License Mode** page, select one of the three license types available, by clicking the appropriate radio button.
- 4** Click the **Next** button.
- 5** In **Network Access** page, confirm that the **Yes** radio button is selected in this page.
- 6** Click the **Next** button.
- 7** In the **Server List** page, configure which servers the SLM system will point to and look for the license:
 - To add a server, type the IP address or the name of the server in the **Add Server** field and click the **Add** button.
 - To remove a server, select the server you want to remove from the **Configured Servers** list and click the **Remove** button.
- 8** Click the **Next** button.

Using the SLM Configuration Wizard:

- 9** In the **Advanced Options** page, you can manipulate the SLM options. Select the **Set Advanced Options** check box to activate the options in this page.
- 10** Click the **Next** button to enable the **Finished** button:
 - If you want to exit the SLM Configuration Wizard without saving the changes, click the **Cancel** button.
 - If you want to keep the changes made in the SLM Configuration Wizard, click the **Finish** button.

Using the Environment Variables:



System icon

- 1** On your computer, click the **Start** menu. Select **Settings** command, and then select **Control Panel** command.
- 2** Double-click on the **System** icon to open the **System Properties** view.
- 3** Click the **Advanced** tab and click the **Environment Variables** button. The Environment Variables view appears.
- 4** In the System Variables group, click the **New** button. The System Variable view appears.
- 5** Type the **lshost** in the **Variable Name** field.
- 6** Type the IP address or server name in the **Variable Value** field.
- 7** Click the **OK** button to add the new environment variable in the System Variables group and close the System Variable view.
- 8** Repeat steps #4 to #7 to add other environment variables.
- 9** Click the **OK** button on both the Environment Variables view and the System Properties view to save the changes and exit the System Properties.

Tip: Reboot the computer to make sure these environment variables take effect.


Check if the server is on the same subnet.

If the server is not on the same subnet, try specifying the IP address of the server by defining the server in the Defined Server List in WLMAAdmin.

- 1 Double-click on the WLMAAdmin application file, located in the following directory:
C:\Program Files\Common Files\Hyprotech\SLM Admin Tools
The WLMAAdmin view appears.
- 2 In the **Navigation** pane (located on the left side of the view, select **Defined Servers** from the tree browser.
- 3 Select **Edit-Define Server List** command from the menu bar.
The Server List view appears.
- 4 Type the server's IP address or name in the appropriate field and click the **Add** button.
- 5 Click the **Close** button to save the changes and close the Server List view.
- 6 Select **File-Exit** command from the WLMAAdmin view menu bar to exit WLMAAdmin.

Check the LSHost or LServOpts environment variable or file.

Is the LSHost or LServOpts values set to **No_Net**?

- 1 On your computer, click the **Start** menu. Select **Settings** command, and then select **Control Panel** command.
- 2 Double-click on the **System** icon  to open the **System Properties** view.
- 3 Click the **Advanced** tab and click the **Environment Variables** button.
The Environment Variables view appears.
- 4 The variable values for **lshost** or **lservopts** are located in the **Value** columns.
- 5 Make any necessary changes/modification by selecting the variable and clicking the appropriate **Edit** button.
- 6 Close the Environment Variables and System Properties views by clicking the **OK** buttons.

Tip: Reboot the computer to make sure these environment variables take effect.

Check that each line in a reservation group file contains 100 characters or less.

There is a limit to the number of characters on each line in a reservation group file (for example, lsreserv). This limit has been found to be 100 characters.

For example, a line in the reservation file:

```
AEA__Token:TechS:509: MKelley KLund CPaskall APollock  
CStrashok FHu DTiwary LRojek ADawson PdeJonge Nsyvenky
```

Contained more than 100 characters preceding the last user id. In this state, the user **Nsyvenky** was unable to run an AES product. When attempting to run Product A, the user **Nsyvenky** received an error message box "Not licensed for Product A."

The solution to this problem is to edit the lines in the lsreserv file so that each line contains less than 100 characters. Each line needs to end with a "\".

Note: Be careful to use the correct slash "\". Ending the line with a "/" will not solve the problem.

For example, the solution to fix the following line in the reservation file:

```
AEA__Token:TechS:509: MKelley KLund CPaskall APollock  
CStrashok FHu DTiwary LRojek ADawson PdeJonge Nsyvenky  
(all in one line)
```

is to add "\" to placed the last two users in a new line:

```
AEA__Token:TechS:509: MKelley KLund CPaskall APollock  
CStrashok FHu DTiwary LRojek ADawson \ (all on one line)  
PdeJonge Nsyvenky (new line)
```

Note: It is necessary to include a space between the end of the line and the "\" character.

If you do not add spaces between "\", as shown in the code below:

```
AEA__Token:TechS:509: MKelley KLund CPaskall APollock  
CStrashok FHu DTiwary LRojek ADawson\ (all on one line)  
PdeJonge Nsyvenky (new line)
```

The line is still considered to have more than 100 characters.

Check that there is no problem with your network.

Ensure that your workstation and server machines can communicate properly (for example, use the 'ping' command to test communication between client and server).

If you can see the licenses on the server using WLMAAdmin, but you cannot connect to the server with the application, then review the following checklist:

Check if license server is outside of your subnetwork.



System icon

If the server is outside your subnetwork, you need to set the LSHOST environment variable or file on the client's computer to point to that server.

- For the client's computer, set the LSHOST using the SLM Configuration Wizard. Refer to Chapter 5, SLM Configuration Wizard for more information.
- For the SLM server, set the LSHOST using the operating system's environment variable:
 - 1** On your computer, click the **Start** menu. Select **Settings** command, and then select **Control Panel** command.
 - 2** Double-click on the **System** icon to open the **System Properties** view.
 - 3** Click the **Advanced** tab and click the **Environment Variables** button. The Environment Variables view appears.
 - 4** In the System Variables group, click the **New** button. The New System Variable view appears.
 - 5** In the **Variable Name** field, type the name of the environment variable as **LSHost**.
 - 6** In the **Variable Value** field, type the IP address or hostname of the server(s).

The LSHost variable naming conventions are:

- Any valid hostname recognized by your network.
- Numeric names (IP address).

Note: If you are using a network system where the DNS is variable, then you cannot use the IP address for this purpose.

- 7** Click the **OK** button. The New System Variable view closes and the new variable and value is added in the System Variables group of the Environment Variables view.

Tip: Reboot the computer to make sure these environment variables take effect.

Check the host name or IP address.



System icon

Is the host name or IP address you specified for the LSHOST or LServOpts environment variable correct?

- 1 On your computer, click the **Start** menu. Select **Settings** command, and then select **Control Panel** command.
- 2 Double-click on the **System** icon to open the **System Properties** view.
- 3 Click the **Advanced** tab and click the **Environment Variables** button.
The Environment Variables view appears.
- 4 The variable values for **lshost** or **lservopts** are located in the **Value** column.
- 5 Make any necessary changes/modification by selecting the variable and clicking the **Edit** button.
- 6 Close the Environment Variables and System Properties views by clicking the **OK** buttons.

Tip: Reboot the computer to make sure these environment variables take effect.

If the license server can be located using WLMAdmin and the license file is in the correct place but you do not see any licenses, or you see the wrong licenses, then review the following checklist:

Check if the license server has been reloaded after installing the licenses on the server.

Use the following steps to double-check your actions while installing the license server:

- 1 Before installing the SLM License Server, shut down and uninstall the old network security server. Ensure that no users are logged in to the server.
- 2 Install the SLM dongle into the parallel port (printer port) or USB port of your computer with an arrow indicating which end is plugged in.

Note: Do not plug this dongle in the serial port because it will damage your computer.

- 3 Restart the computer.
- 4 Ensure that no Windows programs are running on the computer before starting the network license server installation process.
- 5 Insert the AES product CD in to the CD-ROM drive of the computer.

Note: For the computers which have the CD-ROM Autorun feature enabled, steps #6 and #7 are automatically performed. Some Aspen Engineering Suite products can have variants on the way the installation of Network License Server software is initiated.

- 6** From the **Start** menu, select **Run** command.
- 7** In the **Run** view, type: **d:\setup.exe** and click the **OK** button (where **d:** corresponds to the drive letter of the CD-ROM drive).
- 8** From the view that appears, click **Install SLM Server**.
- 9** A document explaining how to install the License Server will appear. Follow the instructions in the document.

**Check your
network
connection
system.**

You may be experiencing network problems.

If you still cannot see the licenses you require, you may not have purchased those licenses. If this is the case, go to our Web site or contact your sales representative about purchasing the needed products.

Refer to the section “List of Licensed Programs” on page 2-15 for a list of AES products and licenses.

Environment Variables

The environment variables can be used to control some of the operation in SLM. The primary ones are:

- LSHost is used to direct the search for a network license to a list of preferred servers.
- LServOpts is used to set License Server Options including configuration information, usage logging, and error logging. Alternatively some of these options can be set through their own environment variable (in other words, LSReserv and LServrcCnf. Where available it is generally recommended to use these specific environment variables).

Note: If the user's computer contains both the registry and the LSHOST environment variables configurations, SLM always look to the values in the registry first. If SLM finds a valid license server in the registry, the LSFORCEHOST and LSHOST environment variables are ignored.

Configuring the Environment Variables



System icon

To configure the environment variables in the System Properties view:

- 1 On your computer, click the **Start** menu. Select **Settings** command, and then select **Control Panel** command.
- 2 Double-click on the **System** icon to open the **System Properties** view.
- 3 Click the **Advanced** tab and click the **Environment Variables** button. The Environment Variables view appears.
- 4 In the User or System Variables group, click the **New** button. The New User or System Variable view appears.
- 5 In the **Variable Name** field, type the name of the environment variable as **lshost**.
- 6 In the **Variable Value** field, type the IP address or hostname of the server(s).
- 7 Click the **OK** button. The New User or System Variable view closes and the new environment variable and value is added in the Environment Variables view.
- 8 If you do not need to set any more variables, click the **OK** buttons to close both Environment Variables and System Properties views.

Tip: Reboot the computer to make sure these environment variables take effect.

LicenseMode / AEATokenMode

For SLM Token system, a Token license file is required on the designated network license server, and a client workstation system environment variable called AEATokenmode (set to the value 1 or 2) is required on the client workstation.

Note: For more details on Token licensing, refer to Chapter 9, Using Token Licenses.

The Token licenses are checked out from the license server when a request is received from an SLM client. At periodic intervals, the SLM client asks the server to re-validate the licenses. Both the date and hard-lock device are checked each time when validating the license.

Token licenses are checked out and validated in a two-step process:

- 1 The descriptor **AET** (Aspen Engineering Token) license is checked out and validated.

Note: If tokens are used, **AEATokenMode** must be set on the client workstations.

- If set to **1**, then a license request is made for an **AET** license.
 - If set to **2**, then a license request is made for an **SLM** (Software License Manager) license.
 - Otherwise a license request is made for an **AEA** (Aspen Engineering Application) license.
- 2 Tokens are checked out and validated.
 - When an **AET** license is checked out, an appropriate number of **AEA__Token** licenses are also checked out. When the **AET** licensed is returned, the **AEA__Token** licenses are also returned.
 - For Unified licensing, the **SLM** license is checked out, as well as an appropriate number of **AEA__Pool** licenses.

Note: AEATokenMode environment variable must be set as a System environment variable in the client's computer and it is only applicable to Token licensing.

Configuring the AETokenMode Environment Variable



System icon

The following is the procedure to configure AETokenMode in Windows 2000 operating system:

- 1** On your computer, click the **Start** menu. Select **Settings** command, and then select **Control Panel** command.
- 2** Double-click on the **System** icon to open the **System Properties** view.
- 3** Click the **Advanced** tab and click the **Environment Variables** button.

The Environment Variables view appears.

Note: Windows 2000 Administrator privileges are needed to change these settings.

- 4** On the Environment Variables view, click the **New** button in the System Variables group.
The New System Variable view appears.
- 5** In the New System Variable view, type **AETokenMode** in the **Variable Name** field.
- 6** Type **1** or **2** in the **Variable Value** field:
 - When the AETokenMode variable is set to **1** or **2**, the Aspen Engineering Suite (AES) application requests Token or Unified licenses. Otherwise, the application looks for Standard SLM licenses.
 - If Token mode is turned off temporarily (for example, for the use standalone licenses), it is good practice to switch the value of AETokenMode to **0** or **FALSE** rather than deleting it.

Note: With Unified licenses, you do not have to change the AETokenMode to **0**. Unified license mode allows for easy switching between Token and Standalone licenses.

- 7** Click the **OK** button to close the New System Variable view and add the new variable in the System Variables group.

Configuring the LSHost File or Environment Variable

For SLM Token system, all environment variables must be configured as system variables. The environment variable or LSHost file is used to instruct the application where to search for the Token server(s):

- The LSHost file contains a list the IP address or computer name for each of the Token servers. When the application searches for the license information it proceeds using the following steps:
 - 1** The application starts with the first address on the list of the LSHost file.
 - 2** If the IP address is not available, the server does not provide the license requested. The application's search engine then moves to the next server on the list.
 - 3** The application's search engine repeats the previous step until it finds a server that provides the license requested.

The LSHost file must be placed in the application root directory for each SLM protected application. If the application is installed on an application server, the LSHost file resides on that server.

- The LSHost environment variable contains an IP address or computer name for a Token server. The environment variable is set on the user's computer. Refer to section "Environment Variables" on page 10-13 for more information.

Note: The LSHost environment variable overrides any LSHost files on the computer. Normally, it is recommended to use LSHost files to avoid interference with any other vendor security that may also be using LSHost.

Caution: If you have other vendor securities already using the LSHost environment variable, then consider using an LSHost file for each AES product or a master LSHost environment variable, which lists the license servers for both your Aspen Engineering Suite and other vendor products.

Standalone & Mixed Licensing Schemes for Token

For SLM Token system, the use of standalone license mode is more restricted, since Standard license requests must be made when a standalone SLM dongle is in use and Token license requests when the Token License Server is in use.

You cannot use both Token licenses and standalone licenses simultaneously. However, it is possible to toggle between the Standard and Token licensing modes by changing the AEATokenmode environment variable in the user's operating system:

- When using the standalone license mode, AEATokenMode must be set to **False** or **0** on the local computer.
- When using the Token network, AEATokenMode must be set to **True** or **1** on the local computer.

Note: If all licenses are Unified (in other words, licenses with **SLM_** prefix), you can toggle between the Standard and Token licensing modes without changing the license type.

Commuting Licenses for Remote Use

Commuting is the process of signing out a license from a license server for a specified period of time.

The program used to commute licenses is **SLMCommute.exe**. This is a standalone program that must be run when the user is connected to the License Server Network so as to obtain and verify the licenses required. The licenses are taken for a minimum period of one day to a maximum of 30 days. The commuted licenses can either be left to expire or be returned to the server before the end of their requested period.

Administration

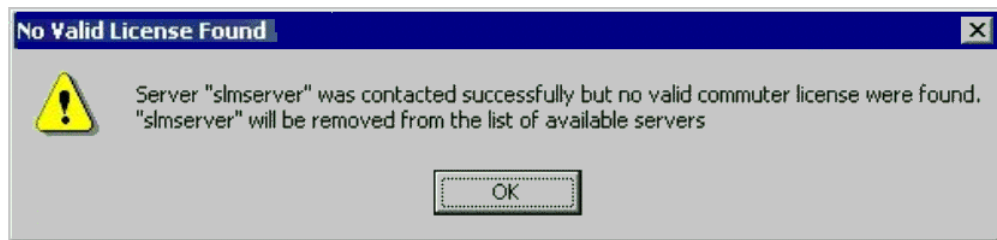
The **Use LSHost** button will access the registry key, LSHOST environment variable, or the LSHOST file in folder containing SLMCommute.exe to determine the servers to access.

Tip: The **Use LSHost** button is located in the Scan Server(s) group of the SLM Commuter Application view.

The registry key settings takes precedence over the LSHost environment variable, and the LSHOST environment variable takes precedence over the LSHOST file, if all three exist.

The license mode will default to Standard, unless the registry keys LicenseMode or AEATOKENMODE are set to 1 or 2. In this case, the license mode will default to SLM Token or Unified.

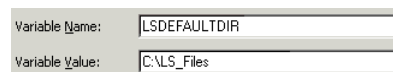
Any attempt to access a license server using the opposite license mode of the selected one (in other words, Token SLMCommute accessing a Standard licenses server) will give the following error:



Note: If you have commuting enabled, refer to section “Commutated Licenses” on page 4-17 for further details.

LSDefaultDir

The LSDefaultDir environment variable can be used to set the default location of the license file. It is recommended that the license server default directory *not* be changed. The default directory is in the same directory as the license server executable.



LServOpts

The LServOpts variable is used to set network license server options.

Note: This variable is set as a system variable and not a local user environment variable.

Note: Some of the options that can be set with LServOpts can also be set with a specific environment variable (which is recommended to be used whenever possible).

The procedure for setting up this variable is as follow:

- 1 On your computer, click the **Start** menu. Select **Settings** command, and then select **Control Panel** command.
- 2 Double-click on the **System** icon to open the **System Properties** view.
- 3 Click the **Advanced** tab and click the **Environment Variables** button.
The Environment Variables view appears.
- 4 In the System Variables group, click the **New** button.
The New System Variable view appears.



System icon

- 5 In the **Variable Name** field, type the name of the environment variable as **LServOpts**.
- 6 In the **Variable Value** field, type the required information for the following options:

Option	Description
-s license file	Specifies the name and location of the license code file. By default, the license server uses the file, lservrc , in the local directory. This can also be specified with the LServrc environment variable.
-e license configuration file	Specifies the name and location of the optional license configuration file. This can also be specified with the LServrcCNF environment variable.
-l usage log file	Enables usage logging by specifying the name and location of the usage log file (you can <i>not</i> include any spaces in the path name). A typical log file name is lserv.log . (This is limited to 8 characters.) By default, usage logging is disabled.
-z usage log file size	Specifies the maximum size of the usage file. The default value for the maximum size of the log file is 1 megabyte. The size can be specified in bytes, kilobytes, or megabytes. For example, -z 2000 means 2000 bytes, -z 2k means 2 kilobytes and -z 2m means 2 megabytes. Once the maximum size of the file is reached, the license server creates a backup log file (unless the -x option has been used). The maximum number of backup files is 99. However you can move existing backup log files to another directory and the license server begins logging again.
-x	By default—on overflow of the usage log file—the file contents are moved in to a backup file. New usage records are then written to the original file until it overflows again. If the -x option is specified, the file will <i>not</i> be backed up on overflow. Instead the license server will simply stop writing further records to the file.
-com percentage	Commuter licensing uses the same license codes as other network licenses. To ensure that not all license codes are used up by the commuter, set this option to the percentage of license codes you want used for commuter licensing. Once that percentage of codes are used up, no more will be made available to commuters until commuter licenses are returned.

Option	Description
-lfe encryption level	<p>Specifies the level of encryption that license transactions are written to in the licenses server log file. The levels are 1 to 4:</p> <ul style="list-style-type: none"> • 1 - No encryption. • 2 - No encryption. Transaction data is readable, but tampering with or deleting an entry is detected by LSUsage. This is the default encryption level. • 3 - Encrypt usage only. Transaction data is readable except for license usage data. Such entries are not displayed by LSUsage. • 4 - Encrypt entire record. All transaction data for the license code is encrypted. Such entries are not displayed by LSUsage. <p>Level 2 is recommended. If contract requires log files to be sent to AspenTech, level 2 must be used.</p>
-f error file	<p>Specifies the name and location of the error file where the license server logs occurrences of unexpected conditions. By default, this is disabled until the option is specified. Then the license server appends the lserv.log file in the current directory.</p>
-u group reservations file	<p>Specifies the name and location of the optional group reservations file. By default, the license server uses the LSReserv file in the current directory. This can also be specified by the LSReserv environment variable.</p>

7 Click the **OK** button.

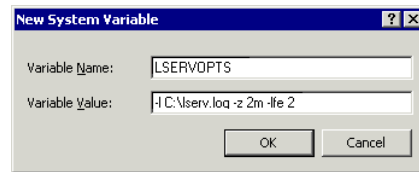
The New System Variable view close and the new variable appears in the System Variable group from the Environment Variables view.

8 If you do not need to set any more variables, click the **OK** buttons to save the changes and close both Environment Variables and System Properties views.

Tip: Reboot the computer to make sure these environment variables take effect.

Setting the Usage Logging

The following figure displays the New System Variable view containing the information for a usage log file with a maximum size of 2 megabytes and level 2 encryption. When typing the path and name of the log file, there can be **NO** spaces and quotes are not required.



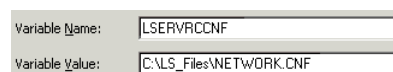
If you activate the usage logging option, the network license server records all license requests and returns in this file. Usage reports can be viewed by using the **LSUsage** tool.

LSUsage tool is a command line utility that displays a summary of AES product usage, providing information on license transactions contained in the license server usage file. At the command line, type the name and path of the LSUsage logfile. Where logfile is the name you have given to the log file.

LServrcCNF

The LServrcCNF environment variable can be used to set the name and location of the network license server configuration file. This file is used in setting up user alerts and other options. If LServrcCNF is not used to specify the configuration file, then the configuration file resides in the same directory as the license code file and has the same base name as the license code file but with the extension ***.cnf**.

It is recommended that the default name and location are used for this file. In most installations, this file is called **lservc.cnf** and resides in the license server default directory.



LSHost

This variable is set on the user's computer. When the application is activated, it first tries to identify a standalone license. If there is no standalone license, it will then attempt to obtain a license by searching for license servers over the network. This broadcast search is limited to the user's local network subnet. If the License Server is located outside the user's local subnet, then the IP address/hostname of the server must be specified to the remote network license server for the Aspen Engineering Suite (AES) application(s) to establish a connection.

For environment variables, there are three ways you can specify the connection to the proper license server. The following lists the steps AES applications take to look for a license server:

- If the LSForceHost Environment Variable is set, the application looks for the specific license server host listed in that variable. If it cannot find that computer, an error message is displayed, and the application closes.

Note: AspenTech do not recommend using the LSForceHost environment variable, as it has been proven unreliable during testing.

- If no LSForceHost Environment Variable is set, then the application looks for the LSHost Environment Variable. If this variable has been set, then the application looks for any of the license server hosts listed.
- If LSForceHost and LSHost environment variables are not set, then a check is made for a file with the name **lshost** in the application root directory. If this file is found, then the application looks for any of the license server hosts listed in the file.

The LSHost variable naming conventions are:

- Any valid hostname recognized by your network.
- Numeric names (IP address).

Note: If you are using a network system where the DNS is variable, then you cannot use the IP address for this purpose.

- **NO_NET** to disable the default network broadcast mechanism from searching the network for a network license server. With this setting the application will only look for a standalone license file.

LShost Environment Variable

The LShost environment variable is used to tell the application to search for one or more license servers.

Note: When using multiple server names on the same line you need to separate the names, in both the environment variable string and “lshost” file, with a colon (:).

When this variable is set, the application attempts to contact each server in the list beginning with the first license server in the list. If none of the specified license servers is found, the application stops searching and returns an error. LShost disables the network broadcast search for servers.

The **lshost** file works the same way as the LShost environment variable.

Tip: The lshost file does not have a file name extension attached to it.

The lshost file must be placed in the application root directory. The following is an example of an **lshost** file.

```
# This is a generic lshost file
# Created June 20, 2000

TESTSERV_1
TESTSERV_2:TESTSERV_3:#TESTSERV_4
TESTSERV_5
```

This file searches for TESTSERV_1, TESTSERV_2, TESTSERV_3, and TESTSERV_5, in that order. Notice that TESTSERV_4 has been commented out. Anything that follows a pound symbol (#) is treated as a comment.

LSForceHost Environment Variable

The LSForceHost environment variable is used to *force* the application to look for a single license server computer. LSForceHost overrides an LShost environment variable or an **lshost** file, and disables the network broadcast search for servers.

Note: LSForceHost is used by all Sentinel License Manager protected products; as such, its use could interfere with the security used by other applications also protected using Sentinel Computer ID dongles. Please use LSForceHost only as a last resort.

LSPROTOCOL

The LSProtocol environment variable is used to specify the communications protocol that is used to communicate with the network license server. Specify **IPX** or **UDP** (for TCP/IP) to choose the protocol.

Variable Name:	LSPROTOCOL
Variable Value:	IPX

Common Error Messages

“6. This feature is node locked but the request for a key came from a machine other than the host running the SentinelLM server” usually occurs with “Unable to check out license”.

Meaning: License for this product or feature was found but the locking information couldn't be authenticated; or to put it simply, the license file was located but the lock code in the file couldn't match any of the “lock nodes” (security dongle or other hardware containing lock code) available.

Possible causes: the SLM dongle/port is not functioning; either the SLM dongle or the lock code in the license file are wrong (in other words, the 2 are not matched); the license file was generated for a standalone installation and is being used on a key server computer.

“18. No such feature recognized by server”.

Meaning: License for this product or feature could not be found.

Possible causes: either the license file could not be located or the license file does not contain authorization for the required product or feature (if this is a network installation, this could be confirmed by running WLMAdmin and checking which licenses are available from the key server).

Frequently Asked Questions

About SLM

What is SLM?

SLM is a software-based security system that controls and tracks the usage of software, components and features from AspenTech and certain third-party software. SLM provides significantly more flexibility than older security systems.

The following is a summary of the major capabilities offered by SLM:

- SLM uses a license file that contains the list of software and features you are licensed to run.
- A single license file can contain multiple software packages and a variety of features (in other words, five copies of HYSYS, three copies of HYSYS Dynamics, and one HYSYS Crude Module).
- New license files can be e-mailed to you to add new software or features, rather than a dongle exchange being required.
- An SLM dongle is used in conjunction with the license file. Unlike traditional dongles, it is simply used as a locking device and contains no license information.

What Advantages does SLM offer?

SLM was designed to provide equivalent functionality to the old AspenTech security system while adding many of the features requested by clients. Some of the major capabilities offered by the SLM are listed below:

- Reduced administration and total cost of ownership.
 - Easier software additions.
 - A security dongle exchange is no longer required to add new software or features.
- Easier administration and management.
 - A single application can now be used for both standalone and network. Two separate installations are no longer required.
 - The SLM uses one dongle for both standalone and network software.
- Enhanced administrator software.
 - The administrator can reserve licenses for specific users.
- Improved performance.
 - The SLM is designed to work on slow networks or networks with high traffic. It increases the speed with which licenses are checked-out from the network license server, resulting in improved application performance.
- Advanced capabilities from Token systems and Commuter options.

General SLM

How do I fix my SLM installation?

Occasionally AES products fail to start because they can't get a license. This can be because:

- SLM is misconfigured
- Licenses on the license server have changed
- Network or license server are very busy
- License server has crashed.

Here are some simple steps to follow:

- 1** Ensure that you are running the latest version of the SLM. The SLM *.dll file is located in:

```
C:\Program Files\Common  
Files\Hyprotech\Shared\strgxi2.dll
```

Note: The above path may be different for different language versions of the operating system.

- 2** Make sure the correct SLM is installed. Open a DOS prompt and type:

```
regsvr32 C:\Program Files\Common  
Files\Hyprotech\Shared\strgxi2.dll
```

- 3** Clean up your SLM configuration:

- Remove your lshost environment variable.
- Remove your AEATokenmode environment variable.
- Remove your LicenseMode variable.
- If you are using an lshost file, remove it.
- Remove all registry entries under:

```
HKEY_LOCAL_MACHINE/Software/Hyprotech/SLM/
```

- 4** Install the latest SLM configuration using the SLM Configuration Wizard.

Refer to Chapter 5, SLM Configuration Wizard for more information.

Why are the Hyprotech green dongle serial number and lock code missing when I run SLM_Echoid.exe?

Running SLM_Echoid.exe will give an entry "Green Key No." if not there is either a problem with your port or your dongle:

- Ensure that the dongle is properly attached. You must have a solid connection between both the Hyprotech green dongle and the 25-9 pin adaptor and the adaptor and the serial port.
- Check which COM Port the Hyprotech green dongle is plugged into.

SLM checks COM ports 1-10. If the Hyprotech green dongle is on another COM port (10+), you must either reconfigure your hardware so that the Hyprotech green dongle is on one of the 10 COM ports, or you must replace your Hyprotech green dongle with either a parallel port SLM dongle or a USB SLM dongle.
- Ensure that the port is functioning correctly.
 - Could another software be interfering with communication with the port? For example HotSync software used with Palm Pilots may need to be disabled if it resides on your computer, because it can prevent communication through the serial port to other devices like the Hyprotech security dongle.
 - Could the port be non-functional? If you install the AES product on another machine does it work with this Hyprotech green dongle?
- If the dongle is on COM1 or COM2, does the dongle still work with older versions of HYSYS (v2.2.2 or earlier) on this machine?
 - If not, the dongle is probably broken and needs to be replaced.
 - If the dongle is still functional but you continue to have problems detecting it with SLM_Echoid.exe please contact your Technical Support office.

Why are the SLM dongle "Sentinel Computer ID" and lock code missing when I run SLM_Echoid.exe?

There are two possible solutions to this problem:

- Check if the Sentinel System Driver exists.
- 1** On the operating system desktop, open the Add/Remove Programs view by selecting **Start | Settings | Control Panel | Add/Remove Programs**.
- 2** If the Sentinel System Driver exists, remove it.
- 3** Install the driver from the AES product installation CD by running the **RainbowSSD5.39.2.exe** in the Server\Driver folder.

Note: The program runs without giving any evidence that it has run, but it only takes a second to finish the installation.

- 4** Return to the Add/Remove Programs view to check that driver is installed.

I am trying to install an SLM application using network security, why am I getting errors?

If you now run SLM_Echoid.exe the SLM dongle is reported as "Sentinel Computer ID".

- Problem with either the port or the dongle.
Try installing the dongle and drivers on another computer. If SLM_Echoid.exe also fails to report the dongle on this computer you likely need a dongle replacement. In this case please contact your local AspenTech office to arrange for a dongle replacement.

The License Server install for SLM application does not install the Sentinel System Driver needed to communicate with the parallel or USB port SLM dongle. Please check for the driver as your first troubleshooting step.

Symptoms:

- Running SLM_Echoid.exe (from the SLM Client Tools folder) will not show an entry for the SLM dongle. Normally there is a "Sentinel Computer ID" entry.
- Sentinel System Driver is absent in the Add/Remove Programs view (select **Start | Settings | Control Panel | Add/Remove Programs**).

Remedy:

Install the driver manually from the AES product installation CD:

- 1** Run the **RainbowSSD5.39.2.exe** program from the Server\Driver folder.

Note: The program runs without giving any evidence that it has run, but it only takes a second to finish the installation.

- 2** Please check that driver is installed. You will see "Sentinel System Driver" in Add/Remove Programs view.
Open the Add/Remove Programs view by selecting **Start | Settings | Control Panel | Add/Remove Programs** from the main desktop.
- 3** If you now run SLM_Echoid.exe the SLM parallel dongle is reported as "Sentinel Computer ID".

Continue with regular troubleshooting if this is not the problem. Refer to Chapter 10, Troubleshooting SLM Problems for regular troubleshooting procedures.

**How do I install the License Server?
Do I need to use Windows 2000 for my server?**

No, you don't need Windows 2000.

Operating System	Why is the option greyed out?
Windows 95/98/NT4.0	While the server can be installed on Windows 95/98/NT4.0 AspenTech does not recommend it as in these environments the server is not very stable.

To manually run the installation from the AES product CD.

- 1 Install the server by running the **Setup.exe** from the \Server\Setup folder on the CD
- 2 Install the Sentinel System Driver by running the **RainbowSSD5.39.2.exe** program from the Server\Driver folder.
- 3 Install the License Admin Tools from the CD's Installation Menu.
- 4 Install the license files and proceed with the remaining installation instructions in your documentation.

When I install my license file by double-clicking on it from my email extra digits are added to its name and it will not work. Why?

When you start an application data file from an email, very often a temporary copy of the file is made in a TEMP directory used by Windows or the email software.

If there is already a copy of the file in this temp directory, it will not overwrite the old one but create a new temp file with a number appended to it.

For example, double-clicking on file name lservrcA.AEALIC will cause a copy of lservrcA.AEALIC to be created in the temp directory and then activated. If you receive another email with the same license file name in it, then when you double-click on it, the license file will save to the temp directory as lservrcA1.AEALIC, and the next time lservrcA2.AEALIC, and so forth.

Use the **Save As** option to save the file to your hard drive before starting the license file installer.

Where is the Sentinel System Driver installed?

In Windows 2000, the driver is installed in:

C:\WINNT\System32\snti386.dll

If you open the Add/Remove Programs view (select **Start | Settings | Control Panel | Add/Remove Programs**), you will see an entry for "Sentinel System Driver".

The machine was a server, but now I want to delete its licenses and stop it from being a server. How do I do this?

To remove the server feature on a computer:

- 1 Remove the dongle connected to the computer.
- 2 Run the program **loadls.exe**.
- 3 Run the Add/Remove Programs (select **Start | Settings | Control Panel | Add/Remove Programs**).
- 4 Select **SentinelLM Server** and click the **Remove** option.
- 5 Run WLMAAdmin, and try to view the server to verify you are no longer functioning as a server.

I have many standalone dongles, how do I manage the license files?

The easiest way to manage many standalone dongles is to install all of the standalone license files on each user's computer.

Each license file works with only one dongle; however, the SLM can detect which dongle is on the back of the user's machine and select the correct license file from the Shared folder for use. The default location of the Shared folder is:

`C:\Program Files\Common Files\Hyprotech\Shared\`

By installing all of the license files on each computer you needn't keep track of which user needs which license file. You also create the ability to swap dongles from computer to computer by doing this.

- 1 Rename the extension of all of your standalone license files from ***.AEALIC** or ***.SLF** to ***.LIC**.

On each user's computer:

- 2 Install the product (for example, HYSYS).
- 3 Copy all of the *.LIC files to the Shared directory
`C:\Program Files\Common Files\Hyprotech\Shared\`

If you upgrade an existing standalone license file or add a new one (in other words, add a new key) you can simply email all users the new license file (leave the extension as AEALIC). Double-clicking on the license file will add it to their *.LIC license file list in the Shared folder.

Note: Users will also need write access to the application directory on their computer as when they run the application the SLM will copy the appropriate *.LIC file, depending on the key, to the application directory and then rename it to 'lservrc'.

Can I switch a standalone SLM dongle between multiple computers?

Yes. AspenTech continues to support the ability to move your standalone dongle from one computer to another and run your licensed software from any computer, so long as the SLM dongle attached. This is standalone dongle interchangeability.

To do this under the SLM simply install the license file locked to the SLM dongle on every computer which will be using the SLM dongle.

If you will be using a pool of standalone dongles, then to ensure interchangeability, the license file for each and every standalone dongle you have will need to be stored on the computer.

When an application starts, the SLM will identify the standalone dongle being used and will attempt to find the license file for that SLM dongle. If it does, the application will run. If not, an error will be generated.

License file installation can be done during the AES product installation, but a new or updated license file can also be added at anytime. For further details refer to section “Standalone Mode” on page 2-7.

What is the Commuter Option?

The commuter option enables laptop users to check-out the licenses required to run an AES product to a specific computer from a network license server. The licenses expire a set period of time following check-out. The maximum check-out period is 30 calendar days (one month). The licenses can be checked-in to the network license server when the computer is reconnected to the network.

Product Specific

HTFS Products don't display the standard SLM error handles. How do I troubleshoot licensing problems?

Unfortunately, prior to March 2002, HTFS product releases do not display the descriptive SLM error messages. This makes it very difficult to troubleshoot installation problems. The following are a few common procedures used to troubleshoot licensing problems:

- Run SLM Echoid to check for the SLM dongle and lock code.
- Make sure the license file content and installation are correct.
- Make sure that your system clock is up to date and that your network administrator have not triggered a time tamper error by changing dates on your system clock.
- Check the license file to ensure that it has not expired

Most licensing problems are related to problems with either the license file contents, license file installation or problems communicating with the SLM dongle. Treat these as you would error codes 6. or 18. Refer to the section "Common Error Messages" on page 10-24 for more information.

Why do I get the error message "Required Component Missing" when trying to run an AES product?

The Required Component Missing message indicates that some file did not register itself properly during the installation. A likely candidate is the strgxi2.dll which must be installed and registered on each client computer. The default location for the strgxi2.dll file is in:

`C:\Program Files\Common Files\Hyprotech\Shared\`

Use a program like regsvr32.exe (found in your AES product program folder) to register the strgxi2.dll on the client computer.

1 Copy **Regsvr32** into the same folder as the strgxi2.dll.

2 Go to a DOS prompt.

3 Change the active directory to the Shared folder:

`CD C:\Program Files\Common Files\Hyprotech\Shared\`

4 Run the regsvr32 program:

`regsvr32 strgxi2.dll`

How can I run my AES product from a network file server using standalone licensing?

Using the SLM, a user can run the AES product this way but the installation is slightly more complicated. Because the SLM accesses licensing information through a license file and then also checks for a security dongle, the client machine must have access to both the license file and the SLM dongle:

- **Standalone SLM Dongle**

This SLM dongle must be on the back of the client machine from which the AES product will be run. Set the LSHOST file or environment variable to NO_NET; this will ensure that the local standalone dongle is being used.

- **License File**

The user must specify the location and name of the license file by setting the "LSERVRC" environment variable on their computer.

For example if the license file is named "lservrc_A" and is placed on the C:\ of the client, the environment variable must be set to "LSERVRC=C:\lservrc_A". If the license file is not located on the client machine, but is located on a file server, please make sure that the client machine has access to the folder containing the license file.

You may want to consider 2 options:

- Placing the proper license file (for the SLM dongle in use) on the individual client machines.
- Placing all license files in a shared directory on the file server machine.

CAVEAT: The only problem with running the AES product in this manner is that you will not be able to swap dongles from machine to machine without changing the LSERVRC environment variable each time to reflect the proper license file for the SLM dongle in use.

The AES product may be also a little slower when loading on start up.

Why is the AES product telling me that I do not have the appropriate licenses to run my case?

You can look at the licenses that your lservrc is set for. Open the file in Notepad and check to see that you are licensed for the options that the case requires on open.

How can I run an AES product locally on the same computer as the network license and hardlock?

Following are step by step instructions on how to use the network license in "local" mode on the user's computer:

- 1** Attach your SLM dongle to the parallel port or USB port of the computer.
- 2** Run the Product Installer.
Insert the AES product CD into the CD-ROM drive of the chosen user's computer.
From the start menu, select Run and in the dialog box, type **D:\setup.exe** (where D: is the CD drive) and click the **OK** button. Or the setup program will autorun as soon as you insert the CD into the drive.
- 3** Install the License Server and license file on the User's machine.
Ensure that the license file is installed in the correct Rainbow Technologies Sentinel server directory (NOT in the Hyprotech/Shared or AspenTech/Shared folders).
As outlined in the instructions, use the License Tools to check the installation:
 - Use WLMAAdmin.exe to check for proper server set up.
 - Use SLM_Echoid.exe to check that the SLM dongle and drivers are properly installed.

NOTE: The Sentinel key driver must be installed manually for the license server (run **RainbowSSD5.39.2.exe** in the Server/Driver folder of the AES product CD).

- 4** Install the AES product on the user's machine as per the install instructions.
Ensure that you choose to use network licensing. During the AES product install you will be asked whether you would like to install local license files; choose **NO** to installing local files.
- 5** Use the SLM Configuration Wizard to set the registry.
Or set lshost = the machine name (or fixed IP address) of the user's computer.
You can either set this as an LSHost registry entry (preferred) or in the environment variable LSHOST. If you choose to create an lshost file, it must reside in the directory containing the AES product executable file (for example, HYSYS.exe).
For details on creating an lshost file or environment variable, refer to section "Environment Variables" on page 10-13.

Note: Do not set lshost = NO_NET as this will force the AES application to look for a standalone license; the license server will not be detected.

6 Open the AES product.

Can I use SLM-enabled products with a Windows / Citrix Terminal Server?

More than likely. Limited testing has shown AspenTech's SLM-enabled applications can be run from a terminal server using network licensing (with the SLM Network License Server on another non-terminal server machine); however AspenTech does not support its products when they are installed on a terminal server.

Guidelines for SLM Features

How do I get logging to work properly on my server?

There are two major procedures:

- 1** Set the lservopts environment variable with the **-l** switch as outlined in the V2.4 Update / Get Started guide.
- 2** Perform a hard reboot of the server. The logging may not set properly without this second step.

The logging file must always be checked after the reboot to ensure that it is logging correctly.

How do I set up Group Reservations?

Please refer to section “Setting the Group Reservations” on page 2-13 of this manual.

If the Reservation file is not working properly, here are some troubleshooting steps:

- 1** Ensure that the SLM can locate group reservation file:
 - Use the default path and file name:
C:\Program Files\Rainbow Technologies\SentinelLM
7.2 Server\English
 - Ensure that both the file path AND name are properly set in the LSRESERV environment variable.

Make sure you hard reboot the computer after changing your environment variables to ensure that they take effect.

- 2** Ensure that the correct case is being used for all of the names in use in the file (set up a log file, the correct case as read by the SLM will show for all names in the log file).

SLM Administrator Tools

My WLMAAdmin preferences aren't saving, why is that?

The WLMAAdmin preferences usually write to a file named WLMAAdmin.ini. If the preferences are not saving, the problem may be that you do not have write privileges to your hard disk drive.

Note: This particular problem occurs if you don't have administrative rights on a Windows 2000/XP systems.

I have shut down the AES product and the WLMAdmin tool still states I have licenses checked out. Why?

The WLMAdmin tool needs to be refreshed. In WLMAdmin, click on the server name in the Navigation pane (left side of the view), right click and choose **Refresh** in the Object Inspect menu.

It might take a few moments as the tool has to interrogate the network. The licenses will not show you as a user of the AES product if you have shut it down and then WLMAdmin is refreshed.

About Tokens

What are SLM tokens?

A token can be thought of as a basic unit of currency, like one dollar. Each AES product and its options have a set a number of tokens they require to run. When a user starts an AES product (and one or more of its options), the number of tokens required is checked out from the SLM network license server, which logs the usage. Additionally, if the client has a fixed maximum number of tokens, a check is made to ensure that the total number of tokens currently checked-out does not exceed that limit. If the limit is exceeded an error is generated and the application or option does not start. The tokens are released when the user closes the application or option.

Time Tamper Check

Time tamper error message "26. The server has found evidence of tampering of the system clock, and it cannot service the request since the license for this feature has been set to be time tamper proof."?

Why am I getting the time tamper error?

Your AES product is disabled when your licenses expire or are otherwise invalidated. To prevent users from circumventing the expiry date by changing their system clock, the SLM establishes time stamps on your computer system and uses them to detect time tampering. In the eyes of the security system, it has determined that there has been some sort of time tampering on your system.

This can be for valid reasons which can be avoided.

How can I fix the problem?

Depending on what has changed in your system, sometimes simply reinstalling either the application (standalone systems) or the license server (network systems) will remedy this error.

Often however, it is necessary for AspenTech to send you a timefix program to clean your computer of remnants of the time stamping.

Instructions for the Time Fix to be run on your computer

You will receive the Time Fix program file (timefix.exe) and a "time fix license" (for example, **fixdec7** is a license to do a time fix on December 7).

Please use the following instructions to clean your machine with this program:

- 1 Uninstall the AES product or license server.
- 2 Copy both of the attached files to the C:\ drive of the computer and then from a DOS prompt run them as follows:
`time fix`

Tip: Don't forget the space between the 2 words.

- 3 Reinstall the AES product or license server.

Important: This "time fix license file" will only function for one day, on the date for which it is set by AspenTech Technical Support! This date will be in the name (for example, fixdec7 will only function on December 7).

Note: This "time fix file" is NOT a license to use products, please do not confuse this file with your product licenses.

If running this Time Fix does not solve your problem please let us know and Technical Support will continue trouble-shooting.

How can I avoid getting this error in the future?

The SLM security incorporates software from Rainbow Technologies, this includes the time checking. Rainbow Technologies considers their time checking technology to be proprietary and as such we are not privy to its workings; however, what AspenTech do know about it at this time is as follows:

- Do not perform any manual registry editing, unless you know **exactly** what the impact will be. It can create a cross-link error which can trigger time-tampering.
- Avoid moving, renaming, or deleting *.dll files; some of the "persistence" information (for example, expiry dates) tracked by the security is contained in such files and any of these operations could create a time tamper in eyes of the security.
- Don't change the system clock (changing the time-zone setting is fine, just not the date or time).

Note: If this problem becomes a repeated event then please communicate this fact with AspenTech Technical Support so they may offer alternate solutions.

I ran the timefix.exe, why did I get the error message "Error getting time from license file."?

The timefix.exe program cannot read the time fix license needed to clean your computer of remnants of the time stamping.

Please ensure that:

- The system clock (both time and date) on your computer is correct before running the timefix program.
- The "time fix license file" does not have an extension to its name (in other words, *.dat), as email programs sometimes will add an extension to the file. Make sure to save the file to disk without an extension and run the program from that disk.

I ran the timefix.exe successfully, but when I run the AES product I still get the error message 26. Why?

Please delete all license files on your computer (search for all files named lservc*.*) and then reinstall them.

If you are still getting error 26, please contact Technical Support for further assistance.

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