
SYSCOD V5

Installation Guide

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All suggestion or error concerning the software or this software manual can be sent to:

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1. INTRODUCTION

1.1 PURPOSE AND SCOPE OF THE DOCUMENT

1.1.1 PURPOSE

The purpose of this document is to describe the SYSCOD v5 1.2.0 token server installation, and customer's computers configuration.

1.1.2 SCOPE

This document is applicable in the SYSCOD V5 1.2.0 licenses uses.

1.2 APPLICABLE AND REFERENCE DOCUMENTS

1.2.1 APPLICABLE DOCUMENTS

N/A

1.2.2 REFERENCE DOCUMENTS

N/A

1.3 GLOSSARY AND ACRONYMS

Entry	Description
SYSCODLM	Licenses and tokens server. It is used to manage floating licenses and limit the number of instance of applications.
.moslf	License files are suffixed by the .moslf (MOS License File) extension.

2. FOREWORD

2.1 ENVIRONMENT VARIABLES

2.1.1 LINUX

Under UNIX systems (GNU/Linux), settings environment variables can be of two sorts depending on what shell is used:

With C-shells (csh, tcsh):

setenv <VARIABLE> <value>

eg:

setenv MOS_LICENSE_SERVER server:2002

With Bourne-shells (sh, bash, zsh):

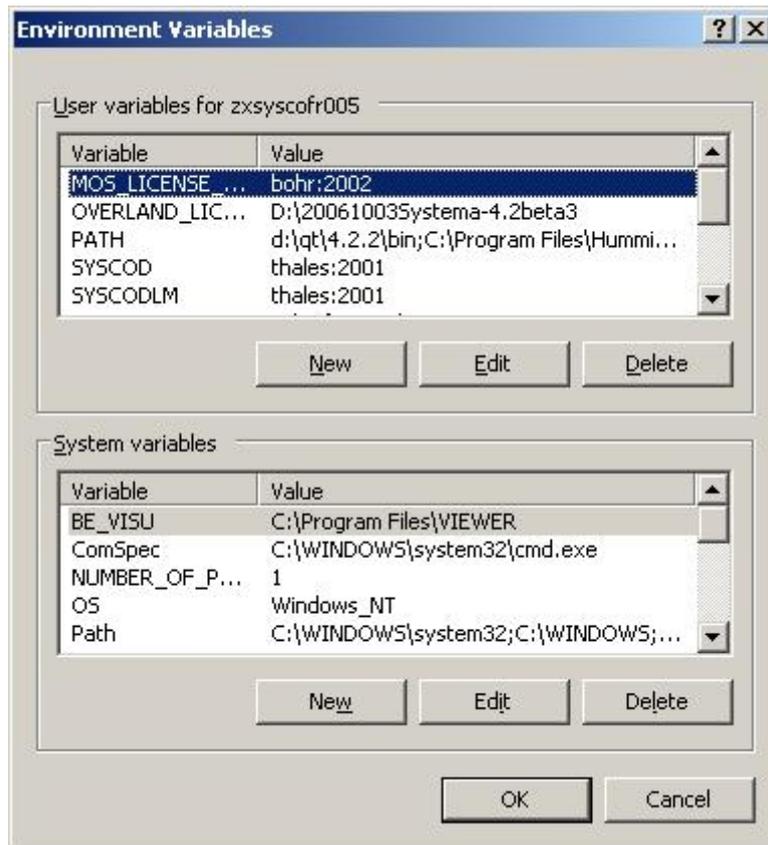
<VARIABLE>=<value>; export <VARIABLE>

eg:

MOS_LICENSE_SERVER=server:2002; export MOS_LICENSE_SERVER

2.1.2 WINDOWS

To add, modify or delete any environment variable in windows, open the **System control panel** (Click **Start** menu, then **Settings**, then **Control panel**, then **System** buttons). In the **Advanced** tab, click on **Environment Variables**.



Img 1: Configuring environment variables on Windows

In the newly opened window, you can, edit and delete environment variables for current user and, if this one have the administrator rights, the system variables (which will take effect on all users of the computer). Each manipulation must be followed by a restart of applications which needs to take effect of changes.

- To add an environment variable, press **Add**, then fill **Name** and **Value** fields, and click **OK** button to set it;
- To modify an environment variable, **select the one you want to change**, press **Modify**, modify name and/or value, and click **OK** button to set it;
- To delete an environment variable, **select the one you want to delete**, and press **Delete**.
Warning: There is no way to retrieve the deleted value after pressing the delete button!

3. LOCAL LICENSES

Warning: If you use a SYSCODLM server or a floating license, please consult the next chapter.

3.1 FOREWORD

The “local license” system is used to provide authorization to execute applications without using any floating licenses (authentication through a license server).

The benefit of this system is that a license server is not required. All information to make applications work are defined in a license file. This file’s name must be suffixed by .moslf to be recognized as a license file by the applications using SYSCOD V5.

The main drawback of this system is that license files are limited to a set of hosts on which applications will work or not. To identify a host, SYSCOD V5 will require a unique number. This number is internally computed by different ways depending the hardware and the operating system of the host. It is called Host-ID.

The chapter 3.2 describes how to determine Host-Id(s) for a host.

The chapter 3.3 describes how to “install” the license file.

The chapter 3.4 describes possible errors due to an incorrect license file “configuration”.

3.2 DETERMINING HOST-IDS

Host identifiers (commonly called “Host-IDs”) are used to identify a computer, and restrict a license uses to a set of pre-defined hosts. As these host-IDs are dependant of the hardware and the operating system of the host the application will work on, it is necessary to determine it before the license file can be edited.

3.2.1 GENERAL CASES

A tool permits the recovering of a host identifier. It just needs to be run, and the output string must be sent to the license editor. This tool is “mosHostIdentifier”.



Img 2: mosHostIdentifier

3.2.2 HASP ON WINDOWS SYSTEMS

On Windows systems, the MAC address (physical address of the network card) is used to determine the host identifier. However, it is possible that a computer doesn't include a network card, or this address is not recoverable (in the laptop case). In these cases, an HASP key can be used. It is commonly a USB dongle which will be required to determine the host-id.

To be compatible with SYSCOD V5, it is required to download and use latest HASP drivers located at the following address:

ftp://ftp.aladdin.com/pub/hasp/hl/windows/installed/redistribute/drivers/HASP_HL_driver_setup.zip

3.2.3 OTHER SYSTEMS

* On GNU/Linux systems, MAC address of one ethernet network card is required.

3.3 INSTALLING LICENSE FILES

License files (filename.moslf) must be copied where the applications binaries are. There is no need of any environment variables for local licenses system.

3.4 ERROR MESSAGES WITH LOCAL LICENSE FILES

The license protected application may return error messages if SYSCOD V5 system didn't find any correct license information. Known problems are:

- **No license information.**

No license information can be found. There is no license file found in the application directory or no floating license configured (see Chapter 4). Check that the license file is correctly named (suffixed by .moslf, eg: "MyLicenseFileForSystema2007.moslf"), and that the application has right to read this file.

- **No license available for this application: <Application and Version>.**

License(s) file(s) was (were) found, but this application and version doesn't appear in this (there) file(s), and is not recognized by SYSCOD V5. Check that the correct license file(s) is (are) well located or contact your application's contact.

- **Local license has expired (file: <License file location>).**

Rights given by the named license file are limited in time and expired. Contact your application's contact to renew rights of application.

- **No local license available for this host: WIN-MAC-XXXXXXXX (file: <License file location>).**

The license file doesn't allow the application to be run on this machine. It will happen if the computer's hardware changes. Please contact your application's contact to update license file.

- **Error while resolving license information's.**

Internal SYSCOD V5 error.

- **Valid local license found, expires at 2008/12/31.**

SYSCOD V5 allows the use of application.

Other error messages specific to the floating license system can happen, please consult chapter 4.

4. SYSCODLM SERVER AND FLOATING LICENSES

Warning: If you use a local license, please report previous chapter.

4.1 FOREWORD

Syscodlm license server is a software that provides the authorization to execute applications on any computers to the network.

The benefit of this system is that only one license file is required, containing all needed information to make the application to work. This file's name must be suffixed by .moslf to be recognized as a license file by the applications using SYSCOD V5.

The license server **distributes license's informations** to applications and **manages (and limits) the number of application instances** which are running.

The license server requires a license file containing only the host-Id (see chapter 3.2) of the server which will execute the license server.

The license server can be run on LINUX or Windows systems. Their installations are described in chapters 4.2 and 4.3.

The process to give an authorization (called a token) is triggered by the application request to execute itself. This implies that the application can ask the license server (through the network via the TCP/IP protocols) this authorization and that the license server is always listening and able to the network and provides tokens on demand.

Chapters 4.2 and 4.3 describe the Syscodlm license server's installation on Linux and Windows systems.

The chapter 4.4 describes the configuration to do on a client system in order to use the floating license.

The chapter 4.5 describes how to get information on the license server activity.

The chapter 4.6 describes error messages which can be encountered while using floating licenses.

4.2 SYSCODLM SERVER INSTALLATION ON LINUX SYSTEMS (REDHAT)

Preliminary note:

Although the license server doesn't need the root privileges to run (only accesses public devices), its installation as a **boot process** (which is more convenient than launching it by hand) will require to be **root**.

Conventions:

'\$' represents the shell, and notify for a user input command.

<server installation directory> is the license server installation directory

Required files:

<server installation directory>/SyscodLMLNX	Executable file of license server.
<server installation directory>/License-Install.sh	Shell script to start the server.
<server installation directory>/License-Uninstall.sh	Shell script to stop the server.
<server installation directory>/LicFile.mosf	Required server License file.

Installation :

To start the server by hand:

```
$ ./License-Install.sh
```

To stop the server by hand:

```
$ ./License-Uninstall.sh
```

4.3 SYSCODLM SERVER INSTALLATION ON WINDOWS SYSTEMS

Convention:

'\$' represents the shell, and notify for a user input command.

<installation directory> is the server installation directory

Required files:

<installation directory>\SyscodLMWIN.exe	Executable file.
<installation directory>\License-Install.bat	Script to start the server.
<installation directory>\License-Uninstall.bat	Script to stop the server.
<installation directory>\licenseFile.mosl	License file

Notes:

The **Administrator privileges are REQUIRED** to install the license server.

Before all manipulations, the Syscodlm server files must be installed.

Open a console (**Start, Execute** and launch cmd.exe)

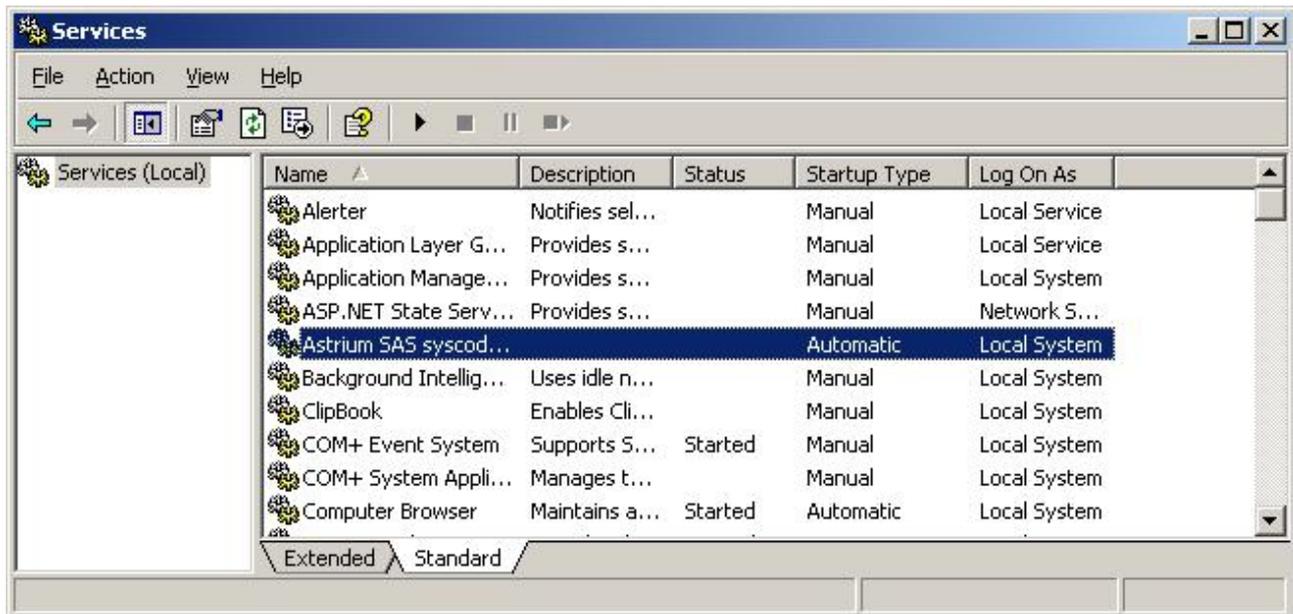
Installation (registering as a service):

```
$ cd <installation directory>  
$ License-Install.bat
```

Uninstallation (unregistering the service):

```
$ cd <installation directory>  
$ License-Uninstall.bat
```

Control the installation of the license server and its status:



Img 4: Services control panel

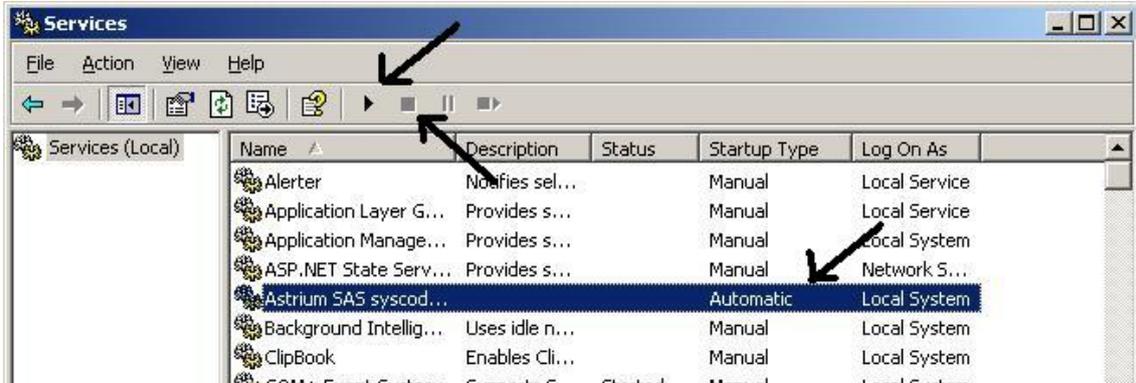
To open the **Services control panel**, activate the **Start** button, then **Settings, Control Panel, Administration tools** and click **Services** icon.

Or run services.msc with **Start** then **Execute**.

If the **SyscodLM** server is correctly installed, it will appear in the **Services control panel** as “**Astrium SAS syscod license server**”.

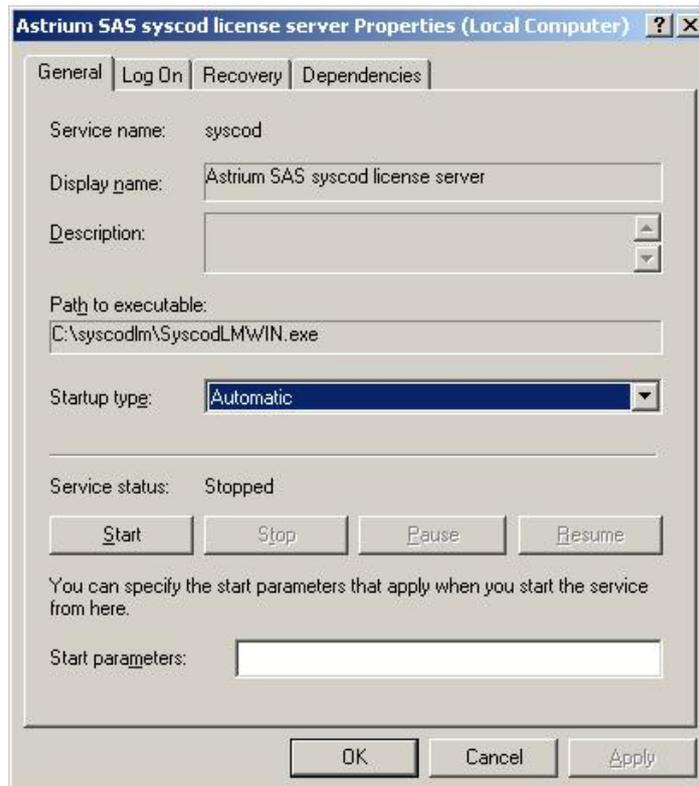
Nota: The old syscodlm server appears with the following name: “**Astrium SAS syscod license manager**”.

Just after the installation, the server will not to be automatically run. If “Startup type” is set to automatic, it will be run at boot. To **start** or **stop** it manually, the **arrow button** or the **stop button** must be pressed. The pause button has no effect. After starting up the service, you can **consult its status**. Please refer chapter 4.5.



Img 5: Services start/stop button, and starting type

The startup type can be set to **automatic**, **manual** or **disabled** in the property panel (**right click** on the syscodlm service, and choose **properties**). The panel is like Img 6. You should let it as a **boot service**, in **Automatic** mode.



Img 6: Syscodlm services properties

4.4 CLIENT CONFIGURATION

The client part of the license server software is the set of the applications and related framework tools.

The computers running an application must be connected (over the TCP/IP protocol) to the same network than the one where is connected the computer running the license server software.

By extension, this last computer will be called as well the license server.

The access to the license server is bound to the two following mandatory items:

- The computer name (hostname) where is running the license server software;
- The listening port number associated to the license server.

The port used must be a free one. The default port is **2002**, and is directly defined in the syscodlm license file. If the 2002 port is already used by another daemon/service (ie: syscodlm service doesn't start), please contact your supplier.

In order to allow the client applications to access the server over the network, an environment variable **MOS_LICENSE_SERVER** must be defined. It will contain the following: "<hostname>:<port>" (Without the quotes).

Examples with the bohr computer on the port 2002:

Linux with C-shell:

```
$ setenv MOS_LICENSE_SERVER bohr:2002
```

Linux with BourneShell:

```
$ MOS_LICENSE_SERVER=bohr:2002 ; export MOS_LICENSE_SERVER
```

These inputs can respectively be put in the .login and .profile files.

For Windows, please consult chapter 2.2.2.

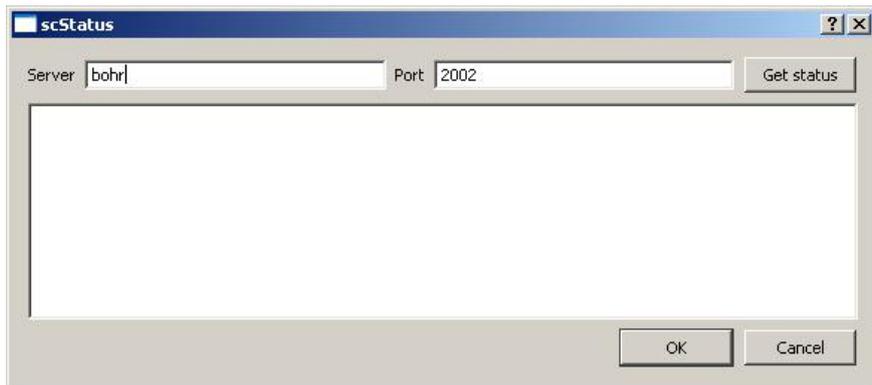
It is possible to put one or more license servers by separating them with a comma. For instance:

```
$ setenv MOS_LICENSE_SERVER server1:2002,server2:2002
```

4.5 SYSCODLM SERVER STATISTICS AND CONTROL

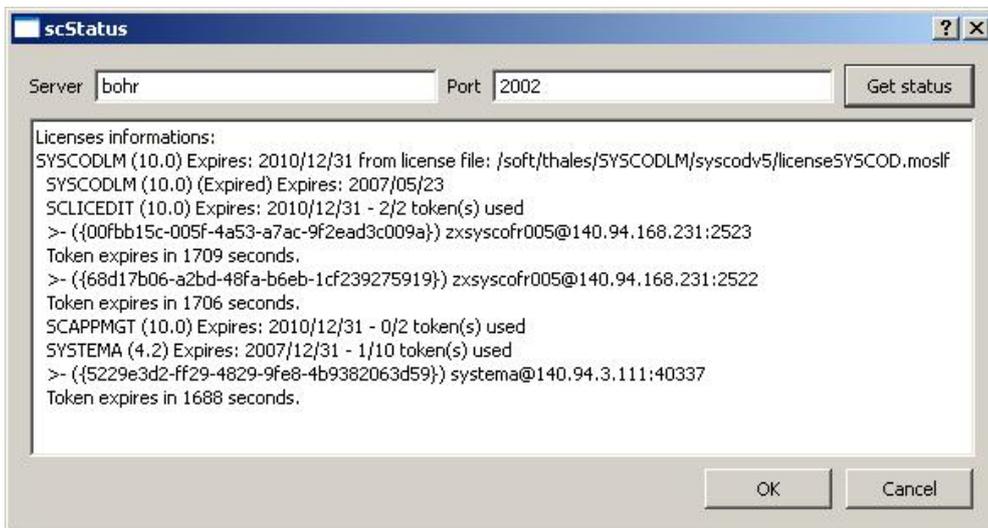
4.5.1 SYSCODLMSTATUS

A statistics tool permits to retrieve the internal status of the Syscodlm server. It can be launch on a client computer, correctly configured (using the **MOS_LICENSE_SERVER** environment variable). If the configuration is correct, the status software will automatically set the “server” and “port” fields.



Img 7: The statistics tools at startup

To retrieve the status information, just push the “Get Status” button. The following should appear:



Img 8: The statistics tools

Description of reported messages:

Licenses informations:

SYSCODLM (10.0) Expires: 2010/12/31 from license file:
/soft/thales/SYSCODLM/syscodv5/licenseSYSCOD.moslf

=> A license file has been found. SYSCODLM is reported with its version number, its expire date and the absolute file path.

SCLICEDIT (10.0) Expires: 2010/12/31 - 2/2 token(s) used

=> First application, its name is SCLICEDIT, its version 10.0. It expires in 2010, and have 2 tokens used for a total of 2 token (Only two occurrence of instance is allowed.)

>- ({d8f7aa5c-4211-4b30-9055-6179c6e89de0}) zxsyscofr005@140.94.168.231:4625

Token expires in 1793 seconds.

>- ({a8e9f5df-d28d-44e6-8ff8-0c4a28c8e7a0}) zxsyscofr005@140.94.168.231:4626

Token expires in 1798 seconds.

=> When token are used, they are reported by the status tool. It gives the unique UUID of the application, the user login using the application, its IP address (network address) and port, and time in second before the token expires.

SCAPPMGT (10.0) Expires: 2010/12/31 - 0/2 token(s) used

SYSTEMA (4.2) Expires: 2007/12/31 - 0/10 token(s) used

=> Other unused applications (0 token are used for both apps). There is a 2 tokens for SCAPPMGT 10.0 which expires the 2010/12/31 and SYSTEMA 4.2, with 10 tokens and expires the 2007/12/31.

SCAPPMGT (10.0) Expires: 2010/12/31 – unlimited tokens used

=> The number of token for SCAPPMGT is unlimited. The number of token used can't be displayed.

4.5.2 LOG FILE

On Linux and Windows, the event log file for the license server is <server installation directory>/syscodlm.log as default. However, log file is automatically rotated every two days (saved with another name, typically syscodlm.log_rotationdate in the same directory), and a new one is created.

Log files contain statistics about the number of supported applications, used tokens, etc.

```
[24632] 2007/05/25 10:38 2: SYSCODLM /soft/thales/SYSCODLM/syscodv5/SyscodLMSOL is starting.
```

```
[24632] 2007/05/25 10:38 2: Reading files in '/soft/thales/SYSCODLM/syscodv5'
```

```
[24632] 2007/05/25 10:38 1: scNetworkServer::run: Instance {e96c9c0f-80e7-4098-ba6a-ec66b2ffc277}
```

```
[24632] 2007/05/25 10:38 2: License expires at: Fri Dec 31 00:00:00 2010
```

=> Typical messages at the license server startup. It informs of the Syscodlm binary used, the license directory used, the instance UUID and the expire date of the Syscodlm license.

```
[24632] 2007/05/25 10:38 1: Licenses informations:
```

```
SYSCODLM (10.0) Expires: 2010/12/31 from license file:
```

```
/soft/thales/SYSCODLM/syscodv5/licenseSYSCOD.mosl
```

```
SYSCODLM (10.0) (Expired) Expires: 2007/05/23
```

```
SCLICEDIT (10.0) Expires: 2010/12/31 - 0/2 token(s) used
```

```
SCAPPMGT (10.0) Expires: 2010/12/31 - 0/2 token(s) used
```

=> Like status tool, the Syscodlm reports managed applications and tokens at the server startup.

```
[24634] 2007/05/25 10:38 2: Currently looking for /soft/thales/SYSCODLM/syscodv5 directory changes.
```

=> End of Syscodlm startup, ready to listen for connection and token requests. Syscodlm is monitoring its installation directory for license changes (if any, it'll automatically reload its licenses).

4.5.3 SYSCODLM VERSION

To print the version of SyscodLM, launch the executable file of the license server (SyscodLMLNX or SyscodLMWin.exe) with the `-v` option.

[24634] 2007/05/28 10:52 2: Delivering license for mosdev@140.94.3.111:57526 app: SCAPPMGT (10.0)
=> License of SCAPPMGT 10.0 is requested and delivered to mosdev on host 140.94.3.111.

[24634] 2007/05/28 10:52 2: Token OUT for mosdev@140.94.3.111:57526 for SCAPPMGT (10.0)
=> Token of SCAPPMGT delivered to mosdev on host 140.94.3.111 (keyword OUT).

[24634] 2007/05/28 10:52 2: Delivering license for mosdev@140.94.3.111:57528 app: SCLICEDIT (10.0)
[24634] 2007/05/28 10:52 2: Token OUT for mosdev@140.94.3.111:57528 for SCLICEDIT (10.0)
[24634] 2007/05/28 10:52 2: Token IN from mosdev@140.94.3.111:57528 for SCLICEDIT (10.0)
[24634] 2007/05/28 10:52 2: Token IN from mosdev@140.94.3.111:57526 for SCAPPMGT (10.0)
=> Another license and token asked for mosdev on host 140.94.3.111, and then both tokens are freed by the client (keyword IN).

[24634] 2007/05/25 14:43 2: Delivering license for zxsys@140.94.168.231:3492 app: SCLICEDIT (10.0)
[24634] 2007/05/25 14:43 2: Token OUT for zxsys@140.94.168.231:3492 for SCLICEDIT (10.0)
[24634] 2007/05/25 14:43 2: Token ALREADY out for zxsys@140.94.168.231:3492 for SCLICEDIT (10.0)
[24634] 2007/05/25 14:45 2: Token ALREADY out for zxsys@140.94.168.231:3492 for SCLICEDIT (10.0)
[24634] 2007/05/25 14:45 2: Token IN from zxsys@140.94.168.231:3492 for SCLICEDIT (10.0)
=> Another license and token asked for zxsys this time, and token renewed two times (ALREADY keyword).

[24634] 2007/06/06 11:28 2: Delivering license for systema@140.94.3.111:49339 app: SYSTEMA (4.2)
[24634] 2007/06/06 11:28 2: Token OUT for systema@140.94.3.111:49339 for SYSTEMA (4.2)
[24634] 2007/06/06 11:58 2: Token EXPIRED from systema@140.94.3.111:49339 for SYSTEMA (4.2)
=> Token required for application SYSTEMA 4.2, and finally expired because no renew have been asked by the client.

[24634] 2007/05/30 16:15 3: Client 140.94.168.231:4742 ask for non-existent app: SYSTEMA (10.0)
=> No application with this name, no application license delivered.

4.5.4 KEEP ALIVE OPTION

The Linux and Windows operating systems use a 'keepalive' setting to test idle TCP connections and ensure they are still active. By default, 'keepalive' is set to 7200000ms (2 hours) on Windows. This means that every 2 hours the server machine tests the idle TCP connection by pinging the client machine from where the connection is coming. If the server gets no response back from the client, then 'keepalive' terminates the idle connection.

The 'keepalive' interval can be modified by configuring the operating system to reduce the time.

Note: Please consult the operating system documentation for more information on making 'keepalive' setting changes.

Instructions provided describe how to change the operating system's 'keepalive' settings.

- On Microsoft Windows set KeepAliveTime registry key

```
\HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\TCPIP\Parameters
```

If the KeepAlivetime parameter does not already exist in the above location, create it. The time specified is in milliseconds.

- On RedHat Linux modify the following kernel parameter by editing the /etc/sysctl.conf file, and restart the network daemon (/etc/rc.d/init.d/network restart).

```
# Value for tcp_keepalive_time  
tcp_keepalive_time = 1800
```

4.6 ERROR MESSAGES ON CLIENTS WITH FLOATING LICENSES

The license protected application may return error messages if SYSCOD V5 system didn't find any correct license information. Known problems are:

- **No license information.**

No license information can be found. There is no floating license configured. Check that the MOS_LICENSE_SERVER environment variable is correctly configured (see Chapter 4.4).

- **Connection to license server impossible (host: <server host>, port: <server port>).**

Can't connect to the license server. Is Syscodlm server started or configuration correct?

- **No license available for this application: <Application and Version>.**

License(s) file(s) was (were) found, but this application and version doesn't appear in this (there) file(s), and is not recognized by SYSCOD V5. Check that the correct license file(s) is (are) well located or contact your application's contact.

- **No token available for this application: <Application and Version> (host: <server host>, port: <server port>).**

License found but no more token is available for this application. Check the token uses by using the status reporting tool.

Since SyscodV5 1.2.0, if the connection to between an application and the license server is broken, tokens used by the application are released. When the connection is restored, the required tokens are requested.

- **License has expired (host: <server host>, port: <server port>).**

Rights given by the named license file are limited in time and expired. Contact your application's contact to renew rights of application.

- **Error while resolving license information's.**

Internal SYSCOD V5 error.

- **Valid license found in license server (host: <server host>, port: <server port>). Expires at <expiration date>**

SYSCOD V5 allows the use of application.