DS License Server

Installation and Configuration Guide

3DEXPERIENCE R2014x

Contents

Overview

Welcome to the DS License Server **3D**EXPERIENCE R2014x Installation and Configuration Guide, designed to answer all your questions about installing and configuring the DS License Server.

The following table outlines the tasks required to install and configure the DS License Server.

Goal	Task	Contents
Installing the DS License Server	Before Starting the Installation	Conceptual information and preliminary remarks to take into account before installing or upgrading.
	Installing the DS License Server on Windows	Describes how to install DS License Server on Windows
	Installing the License Administration Tool Only	Describes how to install the License Administration Tool without the DS License Server on Windows
	Installing the DS License Server on UNIX	Describes how to install DS License Server on UNIX
	Upgrading Your License Servers in a Failover Cluster	Explains one possible method for upgrading your license servers in a failover cluster.
	Uninstalling the DS License Server	Explains how to uninstall the DS License Server on both Windows and UNIX.
Configuring the DS License Server and Clients	Starting the License Administration Tool	Explains how to launch the License Administration Tool and retrieve the computer ID required for ordering your licenses.
	Configuring and Activating a Standalone License Server	Describes how to configure the license server and enroll the server licenses.
	Configuring and Activating a Cluster in Failover Mode	Explains how to configure and activate a cluster of three license servers to operate in failover mode.
	Maintaining Continuous Failover Cluster Operation	Describes the different operations you can perform following failure of one of the members of a DS License Server cluster, without having to stop the cluster.
	Starting and Stopping the License Server	Contains instructions for stopping and starting the license server.
	Configuring Clients	Explains how to configure clients to work with the license server.
	Communicating through Forward and Reverse Proxies	Describes how to communicate with a license server located behind a forward proxy and/or a reverse proxy.
Managing Licenses	Enrolling App Licenses	Describes how to enroll your app licenses.
	Administering Licenses	Describes basic license administration tasks.
	Getting Information About License Usage	Contains useful information about how to track the number of licenses being used per app and per software editor.
	Recycling Named User Licenses	Describes how to recycle named user licenses when need occasionally arises, under exceptional circumstances.

Goal	Task	Contents
	Setting License Authorization Rules	Explains how to authorize users, groups of users or specific license server host machines to use licenses, or to deny authorization, for concurrent user licenses and, optionally, named user licenses.
	Importing and Exporting License Authorization Rules	Explains how to back up license authorization rules and corresponding data by exporting the data to an XML file, and how to import an XML file containing previously backed up authorization data.
	Getting Information About the Authorized Country of Use for Licenses	The **Geolocation** tab identifies for a given license server the country in which the licenses enrolled on the server are authorized.
Tracking License Server Operation	Tracking License Statistics	Describes how to generate statistics about license usage.
	Tracking Server Logs	Explains how to use and interpret the server logs.
	Monitoring the Server	Describes how to monitor license server performance.
Reference	`DSLicSrv` Command Syntax	Syntax of the `DSLicSrv` command.
	`DSLicTarget` Command Syntax	Syntax of the `DSLicTarget` command.
	File Locations, Settings and Registry Entries	Specifies where the different files, settings and registry entries are created when you install and administer the DS License Server.
	Troubleshooting	Contains important troubleshooting information.
	Error, Information and Warning Messages	Lists error messages classified into different categories.

What's New?

This section describes the new and enhanced functionality in the DS License Server.

New Functionality

Additional restricted modes

Before, when a password was set, there were only two levels of license server administration: administrator or non-administrator. The administrator level had access to the license server in full mode (or in restricted mode if another administrator was already connected). The not-administrator level could not access the license server at all.

Now, three levels of license server administration are supported, using two passwords:

- the Full level password allows you complete control of the license server
- the Restricted level password allows you restricted control of the license server.

You can now also connect intentionally to a license server in restricted mode if you know in advance you do not need to make modifications to the license server.

Enable or forbid offline license extraction

You can now enable or forbid offline license extraction when configuring the license server.

Using license authorization rules to control offline license extraction

You can now also decide to reduce the maximum duration for offline extraction of a given license feature, from 30 days (default) to 0 day, by 1 day increments, by using a license authorization rule. Furthermore, you can also use the same rule to associate a keyword to each license feature.

IP ranges in license authorization rules

You can now manage IP addresses in license authorization rules, in addition to users and hosts. This will allow administrators to filter computers by their IP ranges, for example to filter license access by sites. This assumes that the network address plan is well structured.

Mail configuration

You can now configure mail messages to be notified about important licenses server events such as impending license expiry, amongst others.

License usage tracing for all license features

License usage tracing is automatically activated for any additional licenses you enroll.

Statistics for expired or deleted licenses

The new `Display all licenses` checkbox provides statistical information about licenses which are no longer valid or have been deleted.

Deterministic failover member access

You can now configure licensing clients to contact failover members in a specific order, if preferred, instead of relying on the random access implemented by the licensing client process.

Command line mode simplification

You can now redirect output for each individual command, manage passwords in an encrypted storage file and concatenate multiple commands directly from the command line.

Importing and exporting authorization rules from/to XML format You can now back up also IP ranges defined in license authorization rules by exporting them to XML files, then import them on a license server.

Enhanced Functionality

Removed Functionality

Customizing Preferences

User Assistance

Troubleshooting A new troubleshooting chapter has been added.

Installing the DS License Server

This section explains how to install the DS License Server.

Before Starting the Installation

This section briefly presents what a typical license server and license client setup looks like, and highlights certain points you must keep in mind before performing the installation.

Operating System Prerequisites

The following operating systems are supported:

- Windows 7 SP1 64-bit x86
- Windows 8 64-bit x86
- Windows Server 2008 R2 SP1 64-bit x86
- Windows Server 2012 64-bit x86
- Red Hat Enterprise Linux 5.5 64-bit x86
- Red Hat Enterprise Linux 6.1 64-bit x86
- Red Hat Enterprise Linux 6.2 64-bit x86
- SuSE Linux Enterprise Server 11 SP1 64-bit x86
- SuSE Linux Enterprise Server 11 SP2 64-bit x86
- AIX 7.1 TL1 SP2 64-bit Power
- Solaris 10 5/08 64-bit Sparc
- Solaris 11 64-bit Sparc

A minimum of 2GB of RAM is required, 4GB of RAM are recommended.

For more detailed information about prerequisites, refer to the Program Directory.

License Server and Client Typical Setup

A license server helps the administrator to guarantee the license control is implemented in compliance with purchased licensed products embedding the license client.

A typical license server and client setup looks like this:
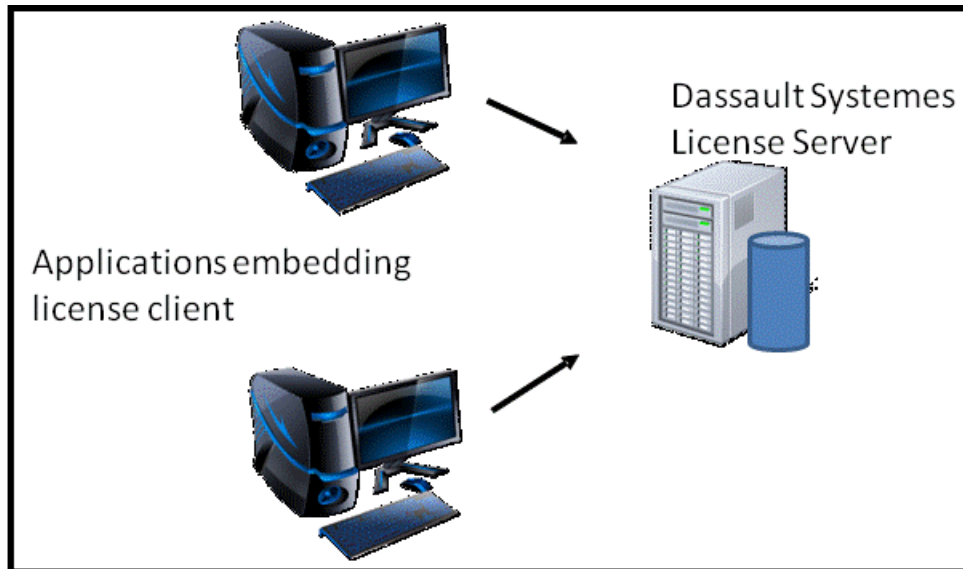
The DS License Server is installed on a server machine on your network. The license administrator enrolls the product licenses on the server. The applications embedding license clients communicate with the license server over the network and retrieve the licenses from the license server.

Preliminary Remarks

Before you start the installation, keep the following points in mind.

Virtual machines, such as VMWare, are not supported. It is not possible to either run or install the DS License Server on a virtual machine. Furthermore, extracting an offline license and using a nodelock license in a virtual machine are not supported.

Only one DS License Server can be installed and configured on a given computer, either as a standalone or as a failover member.

License servers and license client must be synchronized. An absolute time difference of one hour maximum is tolerated.

Upgrading Your License Server

Keep in mind the following when you install a new version of the DS License Server:

- each version of (or hot fix for) the DS License Server is complete, in other words, it is installed in place of the existing version, so the existing version must be uninstalled beforehand
- uninstalling the DS License Server does NOT remove license keys, settings or log files
- failover members can communicate with each other only if they are at the same license server code level. Be aware that upgrading failover cluster members from a given license server code level to a higher code level will prevent the failover cluster from functioning while you are upgrading the second member. Once the second cluster member has been upgraded, normal failover operation resumes.

To upgrade your license servers in a failover cluster, refer to *Upgrading Your License Servers in a Failover Cluster*.

Installing the DS License Server on Windows

This task explains how to unload the DS License Server on a single computer running a supported Windows operating system.
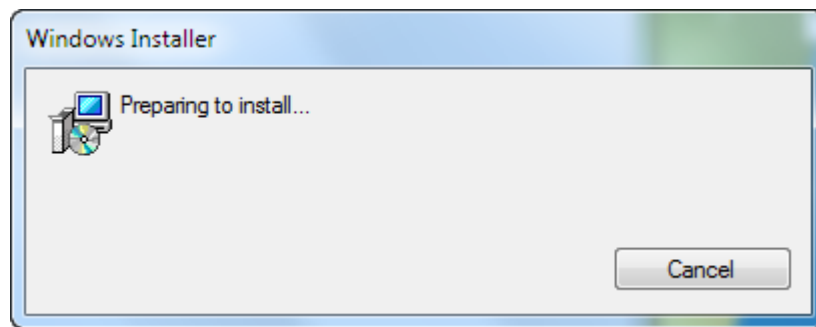
Installation and de-installation rely on Windows-compliant tools enabling anyone familiar with Windows procedures and concepts to install the software without assistance.

1. Log on as an administrator.

   You must belong to the Administrators group, or have the privileges assigned to the Administrators group. Otherwise, you will not be able to start the installation.

2. Insert the media into the drive.

   The following dialog box appears informing you that the installation is about to commence:
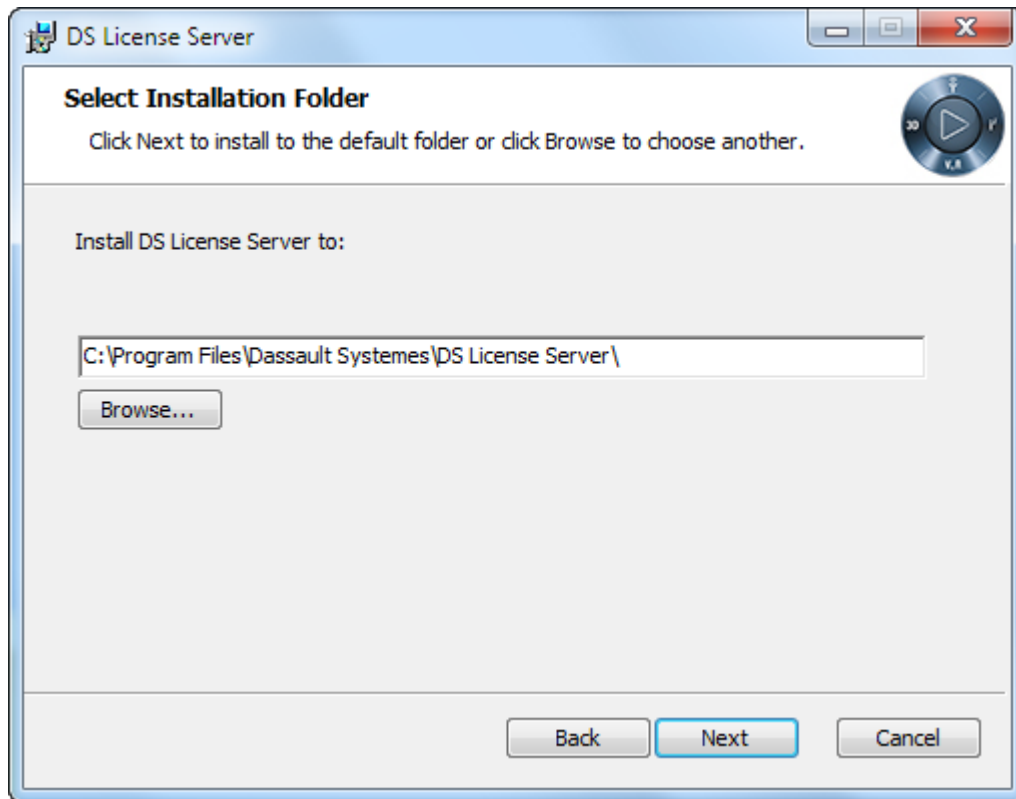

   followed by the dialog box welcoming you to the **DS License Server** setup wizard:

Click the **Next** button to move to the next step.

3. Select the installation folder.

    The **Select Installation Folder** dialog box appears:

The default destination folder is:

```
C:\Program Files\Dassault Systemes\DS License Server
```

If the default destination folder is suitable, click the **Next** button to move to the next step, or click the **Browse...** button and navigate to select another folder and click OK.

The folder you choose must be empty. You can also specify a new folder: if the folder does not exist, you will be prompted to specify that you want the folder to be created, in which case you must click the **Yes** button to create the folder.

Click the **Next** button to move to the next step.

4. Select the installation type.

The **Select Installation Type** dialog box appears:
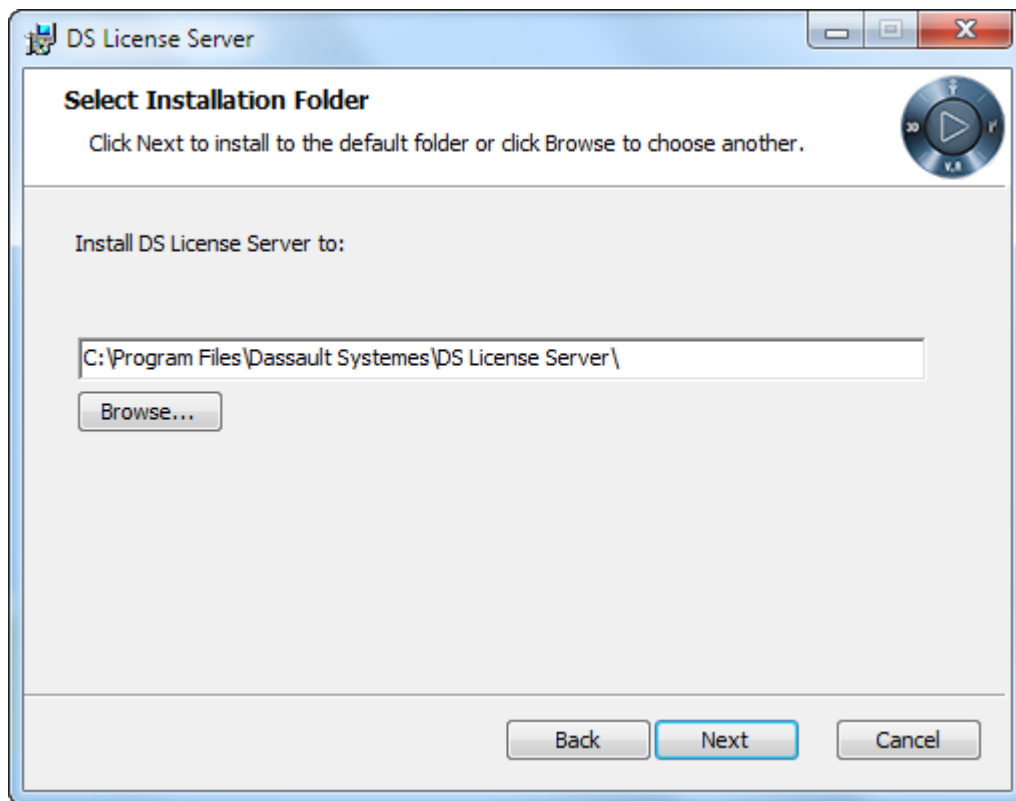
You have two choices:

- **Installs only Administration Tool**: allows you to install only the **License Administration Tool**. Refer to *Installing Only the License Administration Tool on Windows* for more details.
- **Installs License Server and Administration Tool** (default).

In our example, we are going to install both the License Server and the License Administration Tool.

Set the **Listening Administration Port** number. The port number you set is used to listen to DS License Server administration tool requests. The default is 4084.

5. Decide whether to install from scratch or not.

Installing from scratch means that you are installing the DS License Server and also deleting all previous licenses in the license repository. This may be necessary if your licenses have been corrupted. To do so, check the **Install Server from scratch** check button. The warning is displayed again, informing that all licenses will be deleted if you continue:
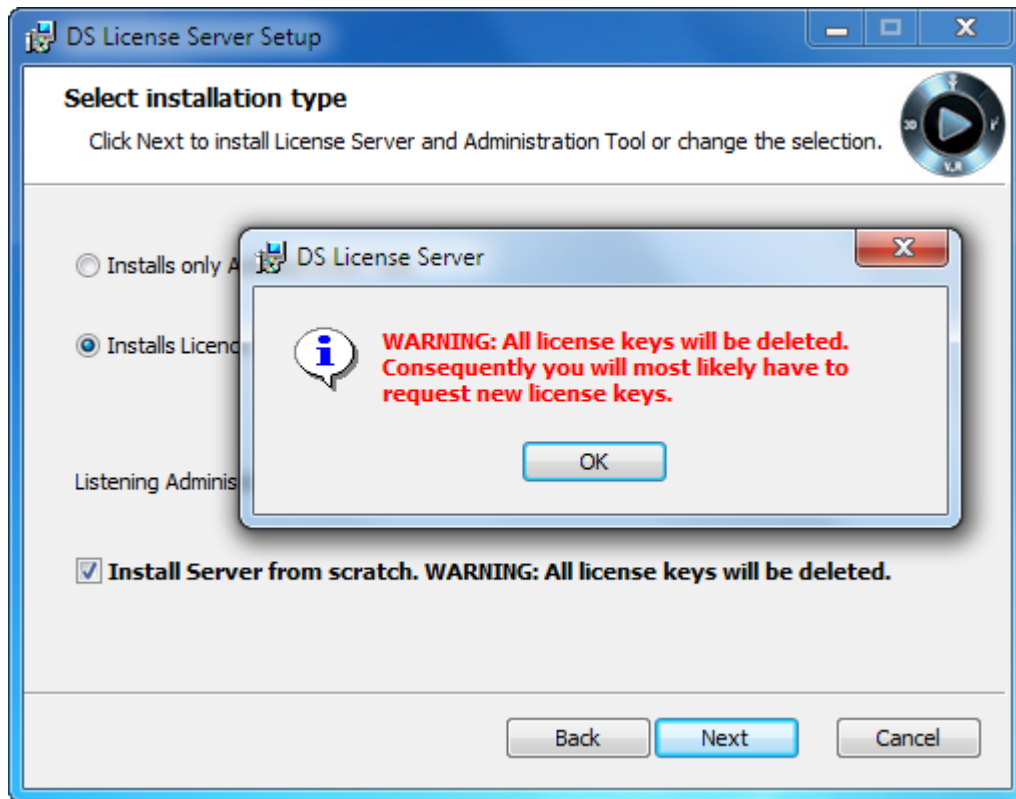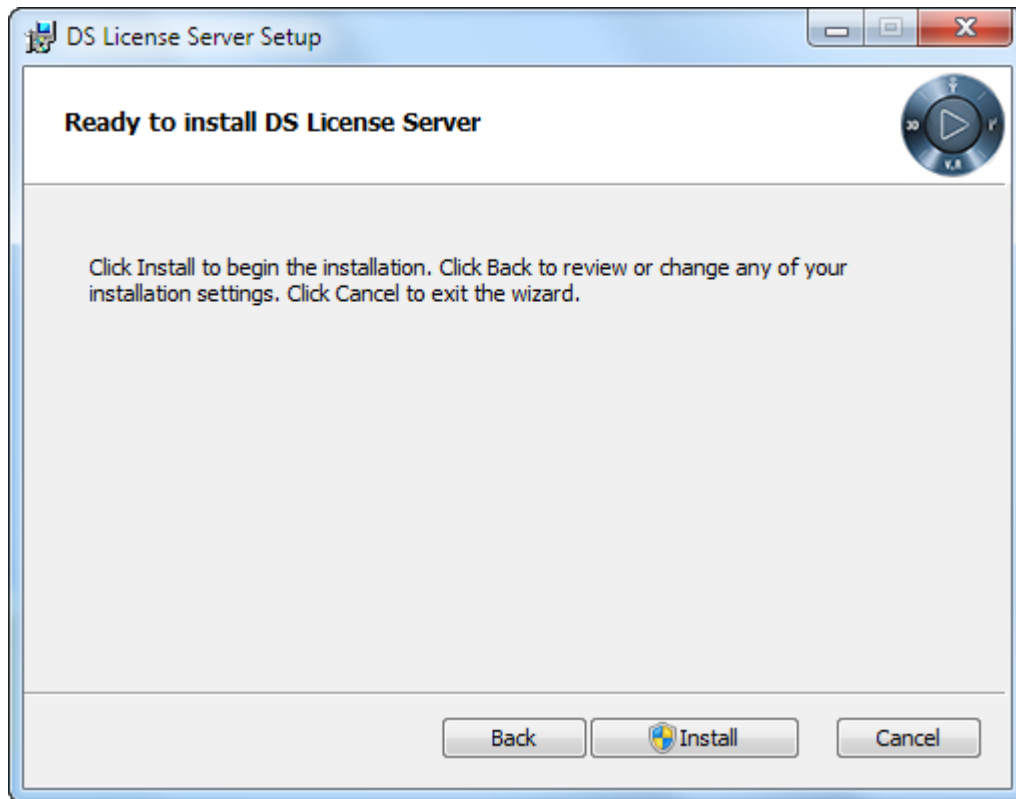
Click **OK**, then decide whether to continue installing from scratch, or uncheck the check box if you want to keep your existing licenses.

Click the **Next** button to move to the next step.
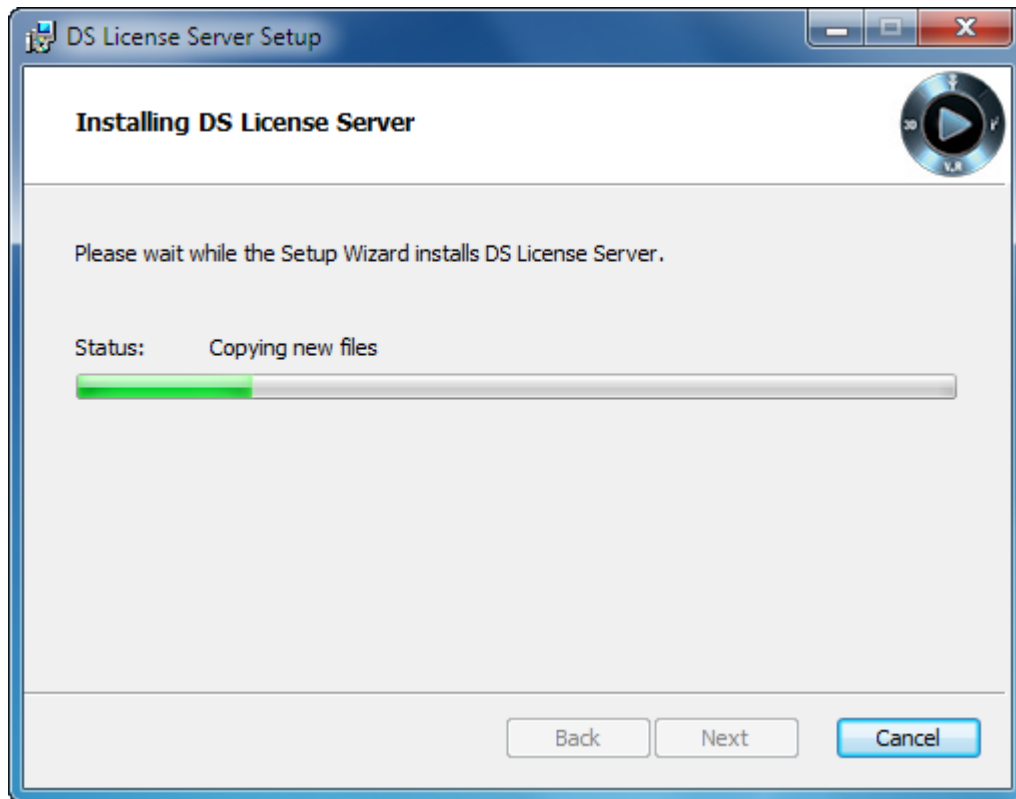
6. Install the DS License Server.

   The **Ready to install DS License Server** dialog box appears:

Click the **Install** button to install the DS License Server. If prompted by UAC to confirm, click the **Yes** button.

The **Installing DS License Server** dialog box appears:

A progress bar is displayed while the DS License Server files are installed and the corresponding Windows service is started. Once the installation has been completed, the following dialog box appears:
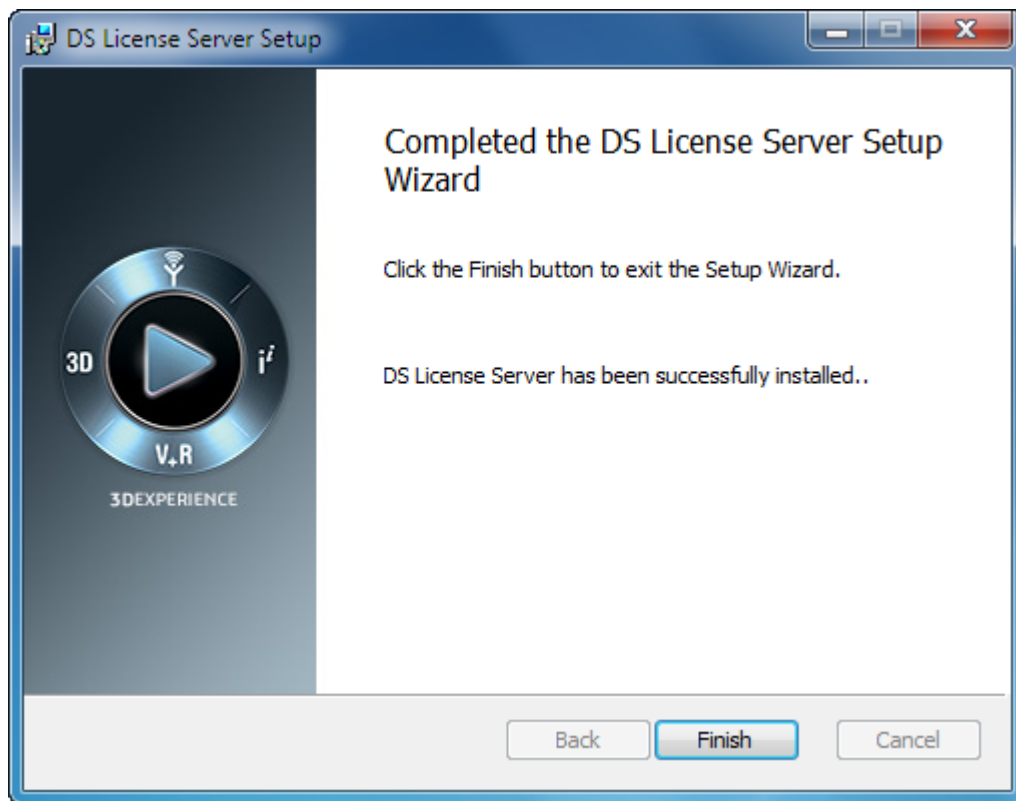
informing you that the installation has been completed, and the **License Administration Tool** is launched automatically, with the **License Server Connection Parameters** dialog box in the foreground.

7. Click the **Finish** button to exit the setup wizard.

The **License Administration Tool** remains open. You now have to create a server definition for the license server you just installed on your computer in the **License Server Connection Parameters** dialog box:
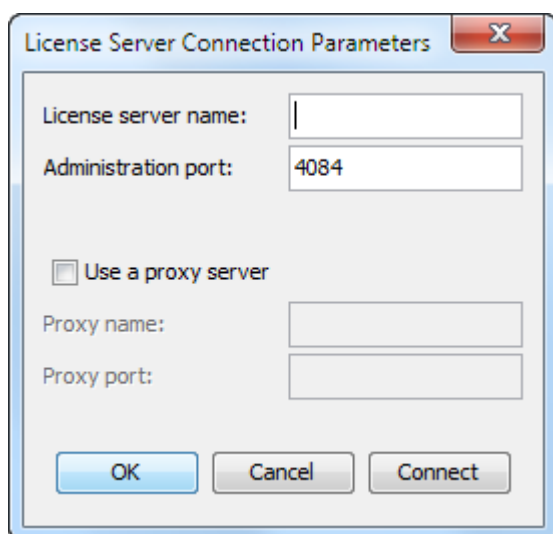
8. Enter the name of the license server (the name of the machine hosting the server, typically). Note that the letters you type are displayed in red until the machine name is found. Then, set the listening port number for the **License Administration Tool** and click **OK**.

☞ **Note:** The **License Administration Tool** may communicate with forward and reverse proxies. For more information, refer to *Communicating through Forward and Reverse Proxies*.

The **Server Definitions** tab now looks like this:

9. Connect to the license server.

You must connect to the server to be able to use it. If you point to the 🖥 icon in the status column, next to the computer name, a message like this will be displayed:
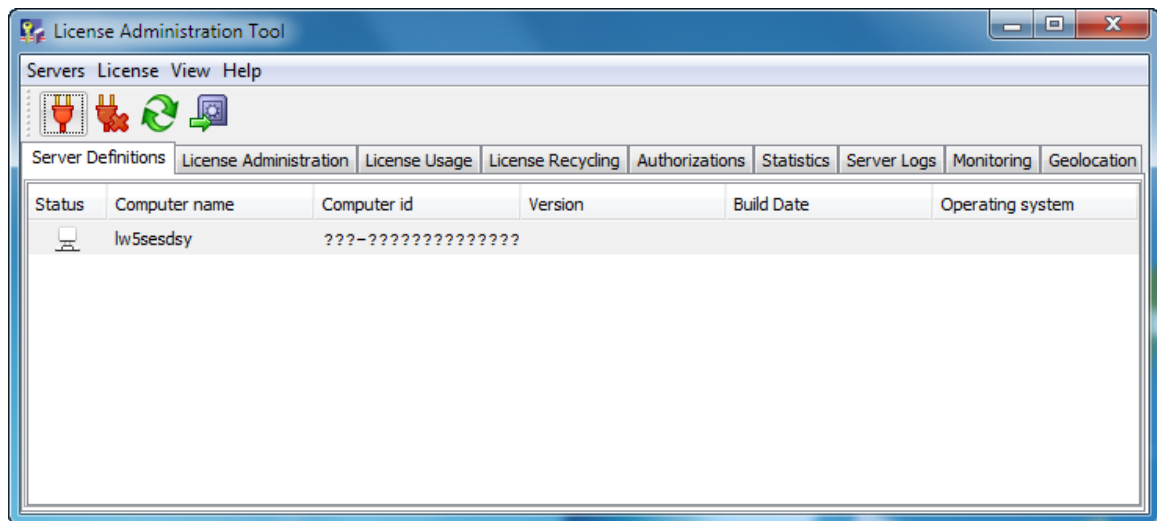server xxx not connected

To connect to the server:

- Select the `Servers - Connect` command and select the server name from the list.

- Or, point to the 🖥 icon, right click and select the `Connect` command.

- Or, you can also click the 🔌 icon to connect all servers at the same time.

The ✖ icon appears over the 🖥 computer icon like this 🖥✖:
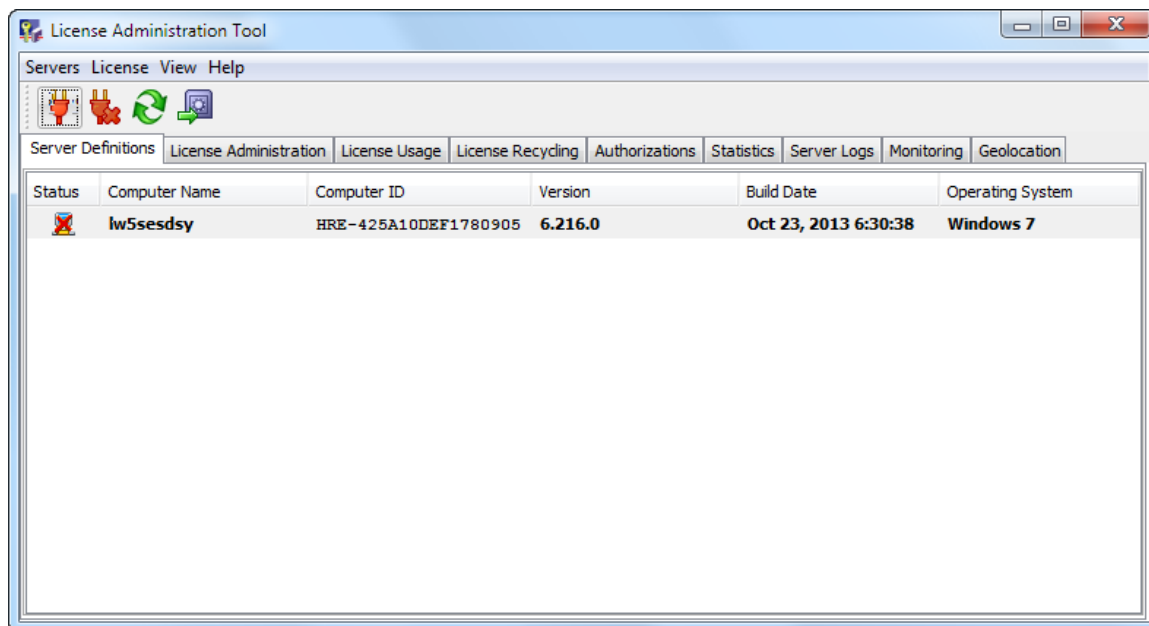
The **Server Definitions** tab contains the following fields:

Status	Specifies the connection status of the **License Administration Tool**:
• 🖥 icon: the license server has been defined but is not connected
• ✖ icon: the server has been defined and connected but the license server has not yet been activated
• 🖥 icon: confirms that your server has been activated, as explained in *Configuring and Activating a Standalone License Server*.
Computer name	Name of the computer hosting the license server.
Computer id	Computer id of the machine hosting the license server.
Version	Internal DS License Server software version number.
Build date	Internal software version build date.
Operating system	Identifies the operating system.

You must configure the firewall on the machine hosting the license server to enable license clients to access the license server, using the port numbers specified in *Port Management*. For example, you can configure the Microsoft firewall on Windows server machines by creating a new rule for the license server using the Server Manager application as illustrated below:
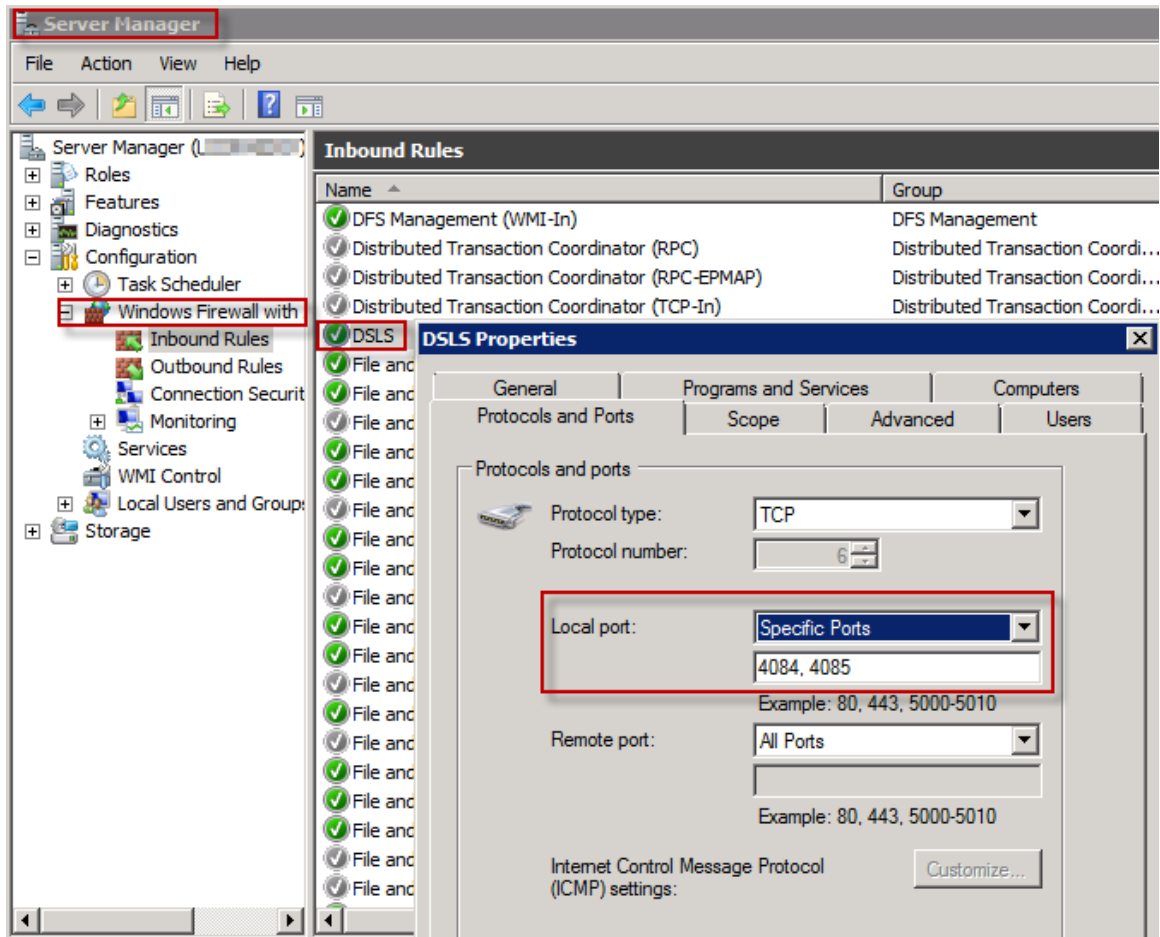
You must now configure the server as a standalone server or a member of a cluster in failover mode and activate it before being able to use it, as explained in *Configuring and Activating a Standalone License Server* and *Configuring and Activating a Cluster in Failover Mode* respectively.

The installation results in the following:

- a DS License Server is installed on the local machine
- the service **DS License Server** is added to the list of Windows services, and is started automatically
- an installation log file is created in:

    `%TEMP%\DSLSmsi.log`

- in the **Start -> All Programs** menu, the entry **DS License Server** is added, containing the commands **License Server Administration** and **License Server Documentation.**

Installing Only the License Administration Tool on Windows

This task explains how to unload only the **License Administration Tool** (without the DS License Server) on a single computer running a supported Windows operating system.

Several **License Administration Tool** instances can be connected simultaneously to the same license server. Only one **License Administration Tool** instance has complete administration access to the license server: either

the local **License Administration Tool** or the first one that connects to the license server remotely. The remote **License Administration Tool** will have the complete administration access only if the option `full` is set for the **Remote administration authorization** option on the license server: if the option `restricted` is set, the remote tool can connect to the license server but only in restricted mode, even if no other administration tool is connected to this license server.

The other **License Administration Tool** instances operate in restricted mode with the following limitations:

*   no modifications are allowed in the **Server Configuration** dialog box
*   no licenses can be deleted using the **License Administration** tab
*   no licenses can be released using the **License Release** tab
*   creation and/or modification operations in the **Authorizations** tab are not allowed.

1. Log on as an administrator.

    You must belong to the Administrators group, or have the privileges assigned to the Administrators group. Otherwise, you will not be able to start the installation.

2. Insert the CD-ROM into the drive.

    The following dialog box appears informing you that the installation is about to commence:

followed by the dialog box welcoming you to the DS License Server setup wizard:

Click the **Next** button to move to the next step.

3. Select the installation folder.

The **Select Installation Folder** dialog box appears:

The default destination folder is:

```
C:\Program Files\Dassault Systemes\DS License Server
```

If the default destination folder is suitable, click the **Next** button to move to the next step, or click the **Browse...** button and navigate to select another folder and click **OK**.

The folder you choose must be empty. You can also specify a new folder: if the folder does not exist, you will be prompted to specify that you want the folder to be created, in which case you must click the **Yes** button to create the folder.

Click the **Next** button to move to the next step.

The **Select Installation Type** dialog box appears:
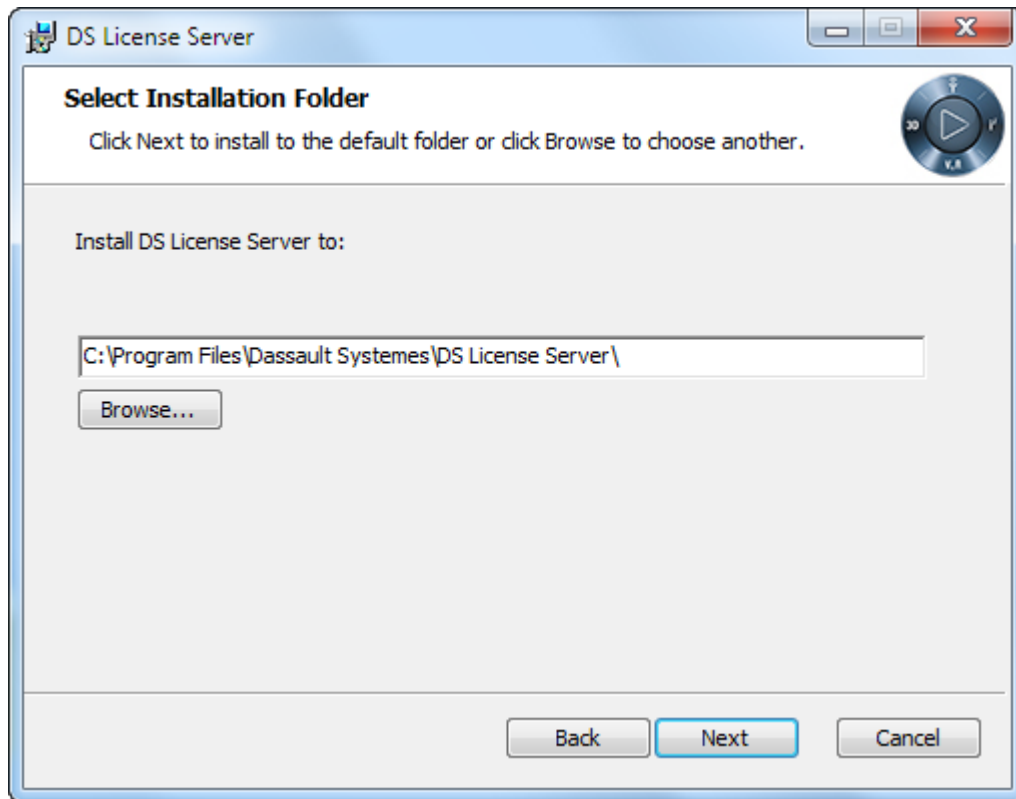
4. Check the **Installs only Administration Tool** check button.
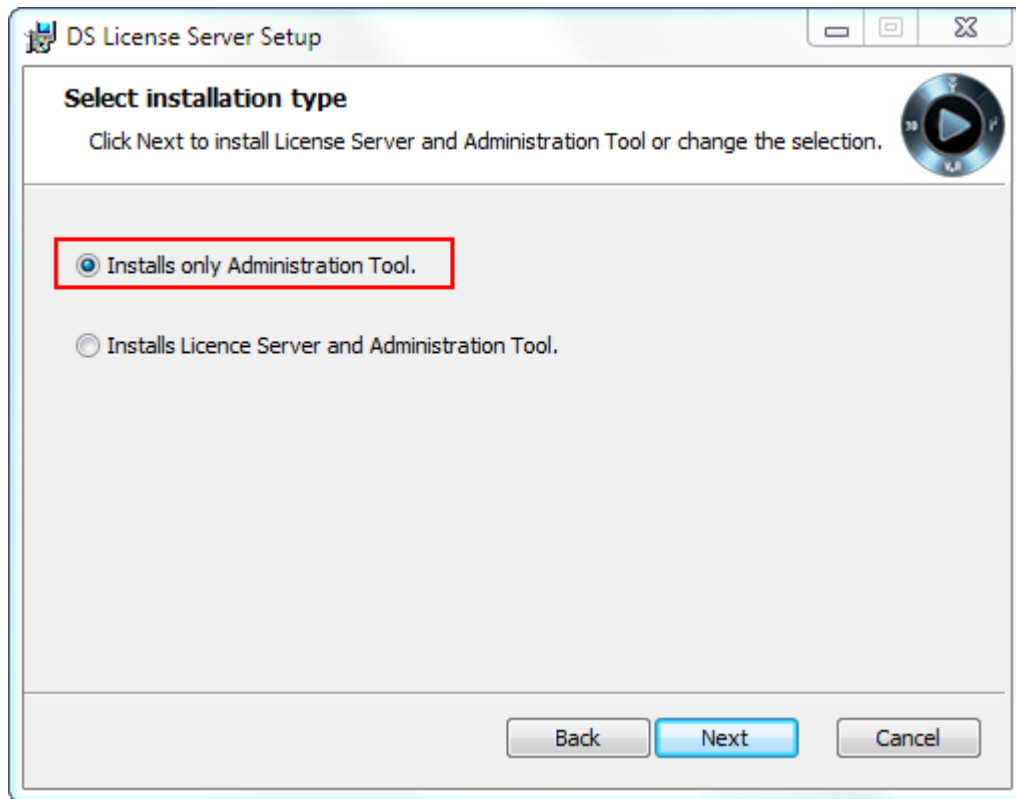
Click the **Next** button to move to the next step.

5. Install the Administration Tool.

The **Ready to install DS License Server** dialog box appears:

Click the **Install** button to install the **License Administration Tool**:

A progress bar is displayed while the **License Administration Tool** files are installed. Once the installation has been completed, the following dialog box appears:
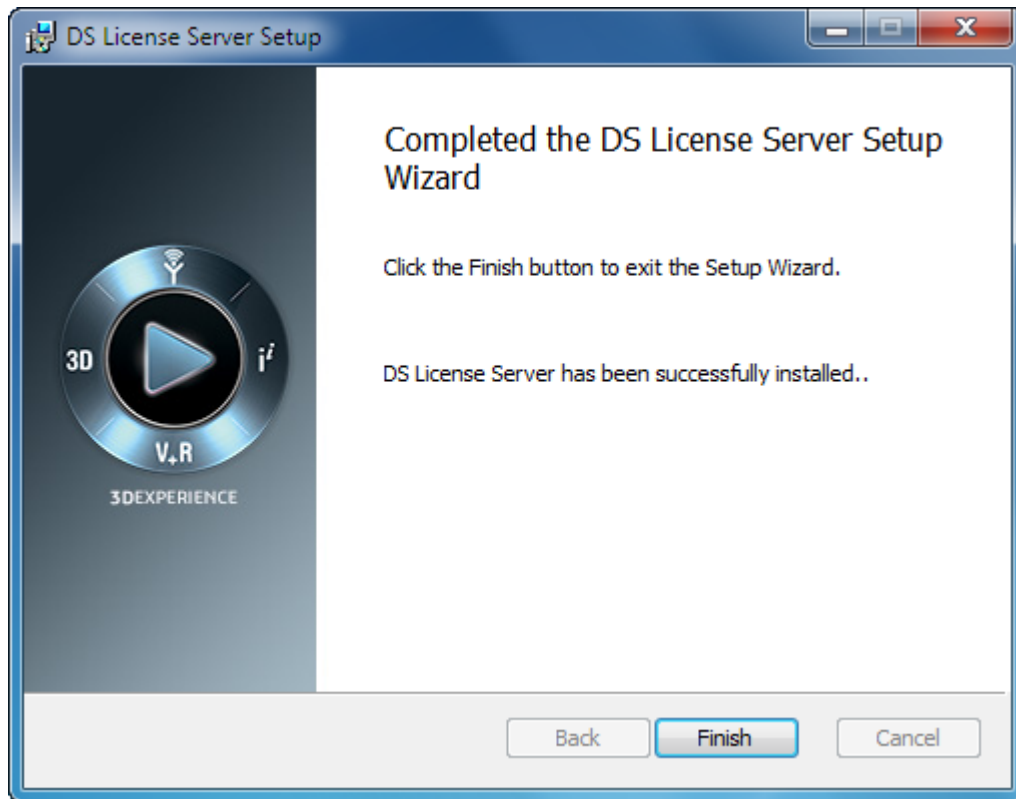
informing you that the installation has been completed, and the **License Administration Tool** is launched automatically.

6. Click the **Finish** button to exit the setup wizard.

The **License Administration Tool** remains open. You now have to create a server definition for the license server to which you want to connect using the **License Server Connection Parameters** dialog box:
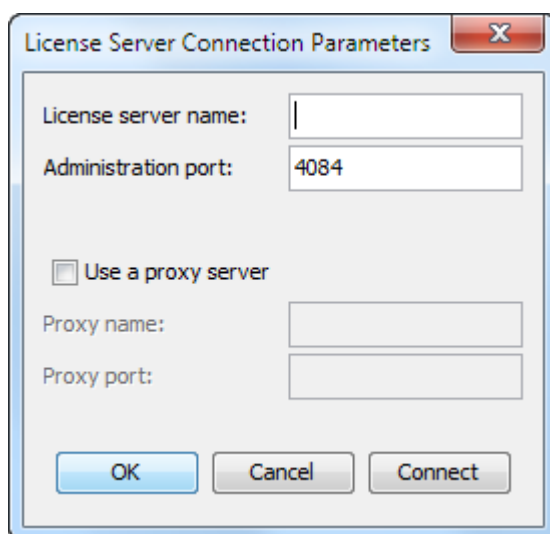
7. Enter the name of the license server (the name of the machine hosting the server, typically), set the listening port number for the **License Administration Tool**, then click **OK**.

You will only be able to administer a remote license server if you checked the **Enable remote administration** check button when configuring the license server.

☞ **Note:** The **License Administration Tool** may communicate with forward and reverse proxies. For more information, refer to *Communicating through Forward and Reverse Proxies*.

The **License Administration Tool** now looks like this:
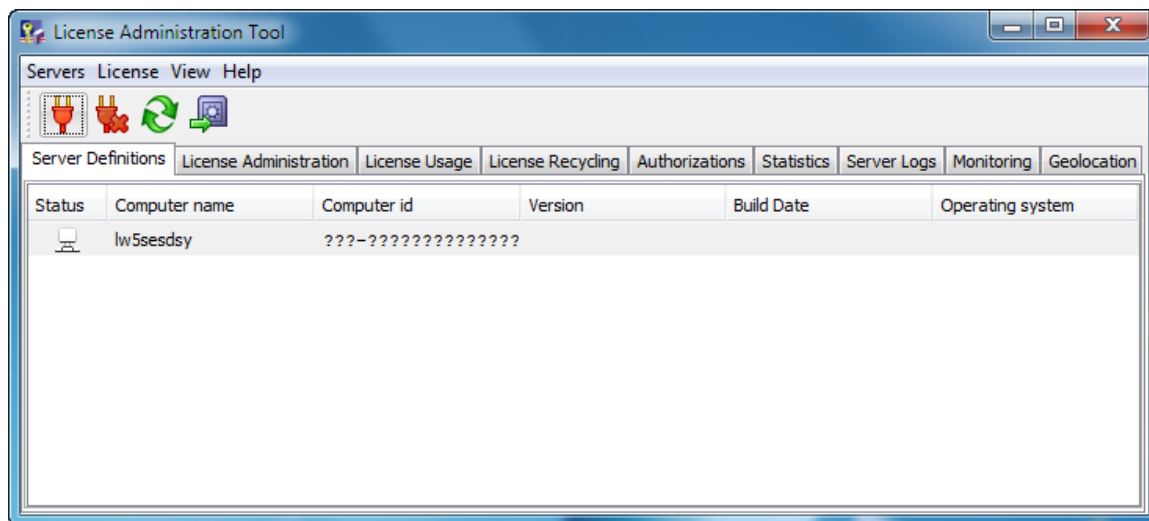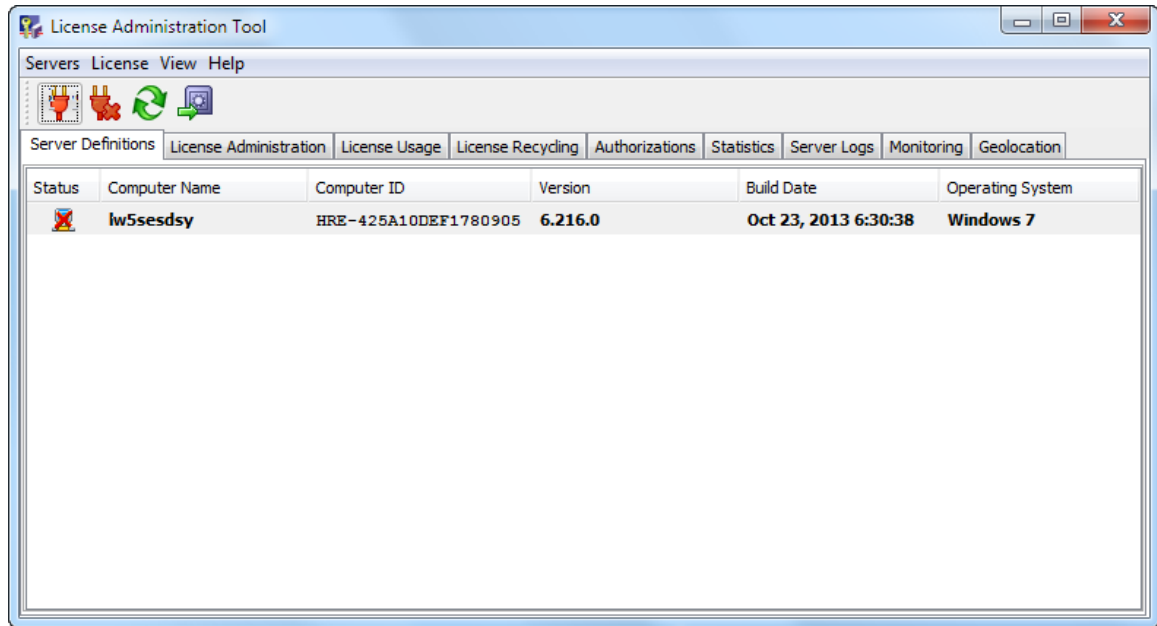
8. Connect to the license server.

You must connect to the server to be able to use it. If you point to the ⬜ icon in the status column, next to the computer name, a message like this will be displayed:
server xxx not connected

To connect to the server:

- Select the `Servers - Connect` command and select the server name from the list.

- Or, point to the ⬜ icon, right click and select the `Connect` command.

- Or, you can also click the 🔌 icon to connect all servers at the same time.

The ✗ icon appears over the ⬜ computer icon like this ⬛:

The installation results in the following:

- a **License Administration Tool** is installed on the local machine
- an installation log file is created in:

  `%TEMP%\DSLSmsi.log`

- in the **Start -> All Programs** menu, the entry **DS License Server** is added, containing the commands **License Server Administration** and **License Server Documentation.**

Installing the DS License Server on UNIX

This task explains how to unload the DS License Server from scratch on a single computer running a supported UNIX operating system.

1. Log on as root.
2. Change directory to the media mount point.
3. Change directory to the appropriate sub-directory for your UNIX platform, for example on AIX:

   `AIX`

4. Check that the DISPLAY variable is exported appropriately before continuing (or perform the installation using the -noUI option).
5. Run the command:

   `./startInstLicServ`

The command can be run with the following options

Option	Description
-p	Set the installation path. The default value is: `/usr/DassaultSystemes/DSLicenseServer`

Option	Description
-n	Set the licensing administration port number. The default value is: 4084
-x	Prevent system file update managing automatic startup when rebooting your machine
-onlyAdminTool	Installs only the **License Administration Tool** (without the license server)
-f	Installing from scratch means that you are installing the DS License Server and also deleting all previous licenses in the license repository. This may be necessary if your licenses have been corrupted.
-noUI	Do not launch the **License Administration Tool** GUI. Useful when no display is available.
-h	Display help

The installation starts and the system outputs the following:

```
/tmp/DSLS/AIX64
Check free port
Chosen port 4084

Installing server in /usr/DassaultSystemes/DSLicenseServer
Creating directory /usr/DassaultSystemes/DSLicenseServer
mkdir -p -m 755 /usr/DassaultSystemes/DSLicenseServer
Directory /usr/DassaultSystemes/DSLicenseServer was successfully created
Installation directory: /usr/DassaultSystemes/DSLicenseServer

TarCmd: tar -xf /tmp/DSLS/AIX64/DSLS.tar
Untar DSLS.tar was successful
Server initialization:
/usr/DassaultSystemes/DSLicenseServer/aix_a64/code/bin/DSLicSrv -initServer
 -adminPort 4084
2013/08/25 16:13:13:044 I INITSERVER  Initializing license server on /var
 args [-adminPort, 4084]
2013/08/25 16:13:13:044 I REPOSITORY  LicenseDB.dat written to disk
2013/08/25 16:13:13:044 I REPOSITORY  LicenseRT.dat written to disk
2013/08/25 16:13:13:044 I INITSERVER  Server version 6.216.0 built on
Oct 23, 2013 1:04:39 PM
2013/08/25 16:13:13:044 I INITSERVER  ComputerId HRE-425A10DEF1780905
Server was successfully initialized

Server start:

Server was successfully started

Sending nohup output to nohup.out.
Admin Console start:
/usr/DassaultSystemes/DSLicenseServer/aix_a64/code/bin/DSLicSrv -adminUI
```

The **License Administration Tool** dialog box is displayed. The **License Administration Tool** has the same graphic user interface and works the same way as on Windows.

☞ **Note:** If you intend to install the DS License Server on a UNIX machine which does not use a display, to avoid automatically displaying the **License Administration Tool**, perform the installation by running the following command:

```
startInstLicServ -noUI
```

To access administration functions, launch the **License Administration Tool** in command line mode as follows:

```
/usr/DassaultSystemes/DSLicenseServer/OS/code/bin/DSLicSrv -admin
```

You must configure the firewall on the machine hosting the license server to enable license clients to access the license server, using the port numbers specified in *Port Management*.

When installing the DS License Server on Suse, some messages related to `insserv` may be displayed. They can be safely ignored.

Upgrading Your License Servers in a Failover Cluster

This section explains one possible method for upgrading your license servers in a failover cluster.

1. From a **License Administration Tool** tool on a fourth machine outside the cluster (to find out how to install just the **License Administration Tool** without the license server, see *Installing Only the License Administration Tool on Windows*) :

   a. Connect to the three failover members, and check that the failover cluster is green.

   b. Stop one of the failover members using the `Servers - Stop` command.

   c. Check that the failover cluster status goes from green to yellow (meaning the cluster is still running).

2. On the failover member that you stopped:

   • On Windows:

     - Check that there is no local **License Administration Tool** running.
     - Uninstall the DS License Server.
     - Install the new DS License Server version.

   • On UNIX:

     - Check that there are no `DSLicSrv` processes running on the member using the command: `ps -ef | grep DSLicSrv`.
     - Delete the installation directory as follows:

       `rm -rf /usr/DassaultSystemes/DSLicenseServer`

     - Install the new DS License Server version as follows: `startInstLicServ -noUI`

3. Return to the fourth machine:

   a. Reconnect to the upgraded failover member, and check that the member is running a different license server version from the two other members.

   b. Stop the server on the second member. The failover cluster status is now red.

4. On the second member, repeat the same steps performed on the first member.

5. Return to the fourth machine:

   a. Reconnect to the second upgraded failover member, then check the license server version and that the failover cluster status is now yellow.

   b. Stop the server on the third member.

6. On the third member, repeat the same steps performed on the other two members.

7. Return to the fourth machine:

   a. Reconnect to the third upgraded failover member.

   b. Check the license server version and that the failover cluster status is now green.

Uninstalling the DS License Server

This section explains how to uninstall the DS License Server on both Windows and UNIX.

Uninstall on Windows

Uninstalling relies on Windows-compliant tools enabling anyone familiar with Windows procedures and concepts to uninstall the software without assistance.

Before you begin: Before uninstalling a DS License Server version on Windows OS, be sure to close:

* all browser applications, such as Internet Explorer or Firefox
* all DS **License Administration Tools**.

1. Log on as an administrator.
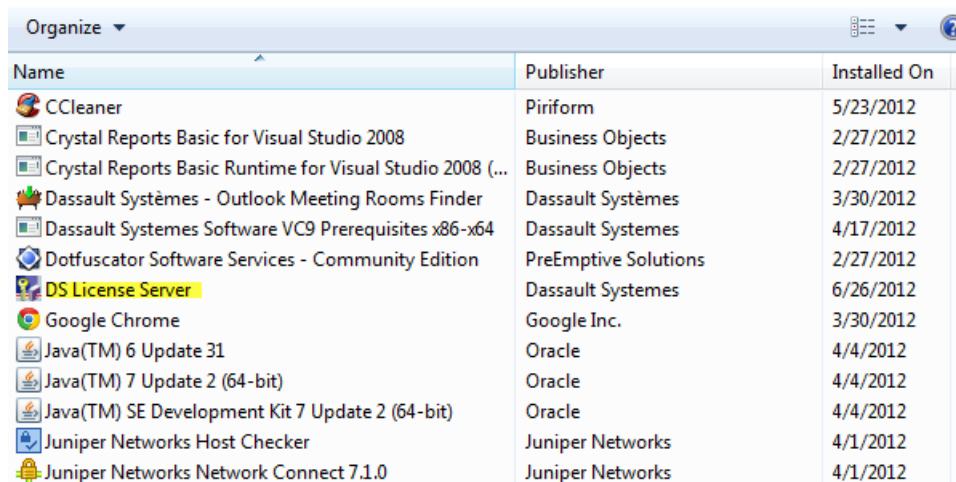
    You must belong to the Administrators group, or have the privileges assigned to the Administrators group. Otherwise, you will not be able to uninstall the software.

2. On the Windows desktop, select the **Start > Control Panel,** then double-click the **Programs and Features** control.

    A dialog box is displayed containing the list of programs and features installed on your computer.

3. Double-click the item **DS License Server** from the list.

    The list looks something like this (depending on the software installed on your computer):

4. When prompted to confirm, click the **Yes** button each time to confirm.

The program removes:

* the installation folder
* the Windows service named `DS License Server`
* all entries in the **Start > All Programs** menu
* all registry entries.

Note that the following are NOT removed:

* license keys

- settings
- logs.

Uninstall on UNIX

This section explains how to uninstall the DS License Server on UNIX.

1. Log on as root.
2. Stop the license server by running the following command:

```
/usr/DassaultSystemes/DSLicenseServer/OS/code/bin/DSLicSrv -stopServer
```

or by using the `Servers - Stop` command provided by a local or remote **License Administration Tool**. If you are using a local administration tool, exit this tool.

3. Delete the installation directory as follows:

```
rm -rf /usr/DassaultSystemes/DSLicenseServer
```

4. If you did not use the -x option with the `./startInstLicServ` command when you installed the license server, delete the remaining system files created at this moment by running the following commands, depending on the UNIX platform:

On AIX:

```
rmitab DSLicSrv
```

On Solaris:

```
rm /etc/rc2.d/S98dsls
rm /etc/rc2.d/K96dsls
rm /etc/init.d/dsls
```

On Linux:

```
/usr/lib/lsb/remove_initd /etc/init.d/dsls
rm /etc/init.d/dsls
rm /etc/sysconfig/dsls
```

Configuring the DS License Server and Clients

This section explains how to configure the DS License Server and clients.

Starting the License Administration Tool

This section explains how to launch the tool if it is not running, and obtain the computer id required for ordering licenses.

1. Select `Start - All Programs - DS License Server - License Server Administration`.

   The **License Administration Tool** is displayed.

   The tool has a menu bar and several tabs. The **View** menu contains a list of tabs with check marks. Click the check marks to hide or display tabs as required.

   Optionally, you may wish to select another display scheme by using another one by selecting the **View** > **Look and Feel** command.

2. Locate the **Computer id** column in the dialog box:
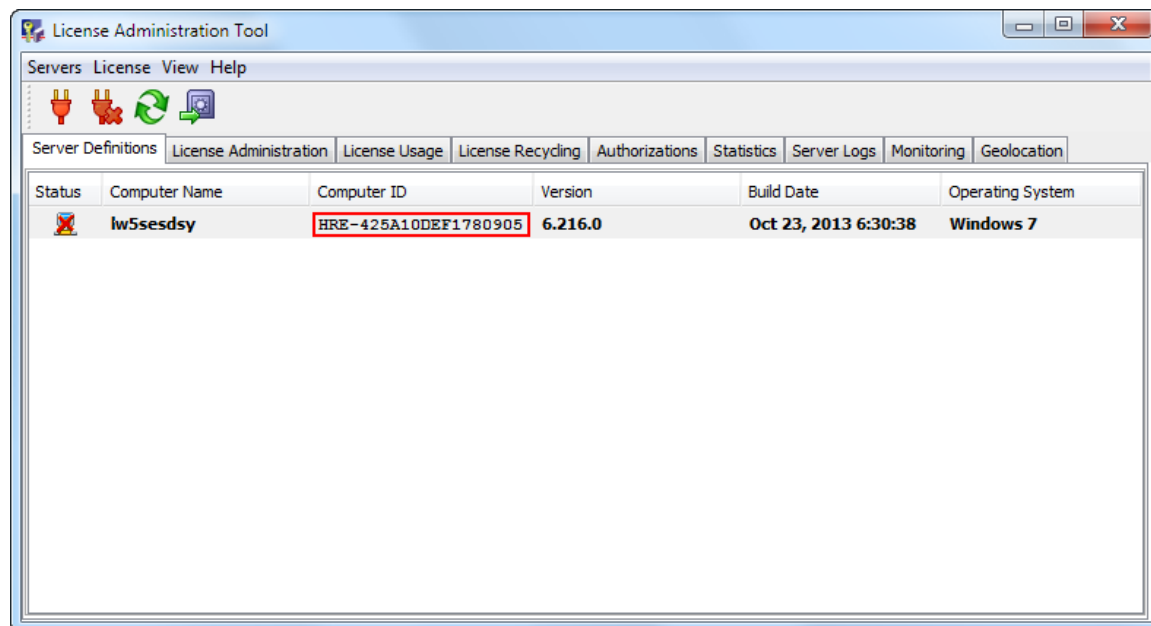
The computer id will be required when you order your licenses.

👉 **Note:** An alternative method of obtaining the computer id is to go to the following installation directory:
   `C:\Program Files\Dassault Systemes\DS License Server\win_b64\code\bin`

and run the following command:

```
DSLicTarget -t
```

The `DSLicTarget` tool is also available in the appropriate operating system folders on your CD-ROM.

On Windows, the computer id is based on the network card. Teamed and bridged network cards are not supported. A possible workaround is to add another network card which does not need to be connected to the network, but needs to be powered on.

Multiple network cards

On Windows, if your machine hosts several network cards and the computerID managed by the license server is not from the network card you wish, you can change it. Be aware that, if license keys are already enrolled in the license server, they will become invalid. So you will need license keys generated for the desired computerID.

When installing the first time, the license server retrieves the computerID and stores it in its database. If the computerID is changed later by using the `DSLicTarget -s` command, the license server will not take it into account.

In order to reset the computerID in the license server database, you can follow these steps:

1. Run the command `DSLicTarget -l` to list the IDs available on the machine.
2. Run the command `DSLicTarget -s` (in an elevated command prompt) to set the desired ID in the Windows registry.
3. Uninstall the license server.
4. Remove the **License Administration Tool** settings file:

   ```
   C:\Users\userid\AppData\Roaming\DassaultSystemes\LicenseAdminUI
   ```

5. Reinstall the license server and check the **Install Server from scratch** check button to force the license server to read the ID value stored in the registry, instead of the value in the license server database.

👉 **Note:** On UNIX, start the **License Administration Tool** by running the following command, for example on AIX:

```
/usr/DassaultSystemes/DSLicenseServer/aix_a64/code/bin/DSLicSrv
 -adminUI
```

Configuring and Activating a Standalone License Server

This section explains how to configure and activate your license server in standalone mode.

The installation created a license server on your machine. But you must first configure and activate the license server before a client process can be served.

You must choose to configure the server:

- as a standalone server
- or in failover mode as a member of a cluster.

These choices are mutually exclusive. Once you have configured the server in either standalone or failover mode, you cannot modify your configuration. In particular, license keys are different.

1. Select `Start - All Programs - DS License Server - License Server Administration` to launch the **License Administration Tool** if it is not already launched:
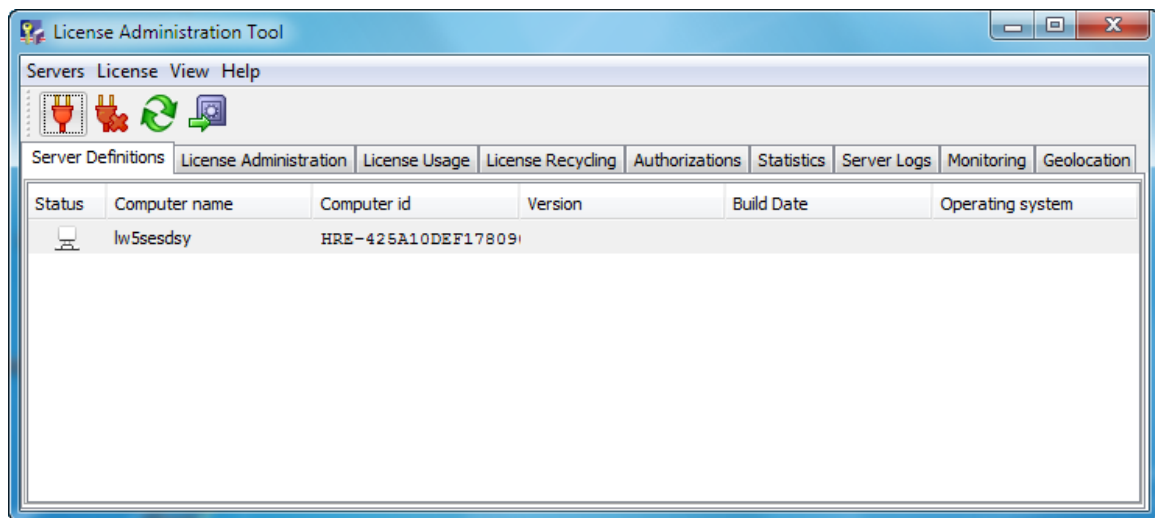
2. Connect the **License Administration Tool** to the server.

   You must connect to the server to be able to use it. If you point to the ⬛ icon in the status column, next to the computer name, a message like this will be displayed:
   server xxx not connected

   To connect to the server:

   • Select the `Servers - Connect` command and select the server name from the list.

   • Or, point to the ⬛ icon, right click and select the `Connect` command.

   • Or , you can also click the 🔌 icon to connect all defined servers at the same time (only one in the current scenario).

   Note that you can connect the tool to several license servers simultaneously. To disconnect from one license

   server, select the `Disconnect` command. To disconnect all license servers, click the 🔌 icon.

   The status now looks like this:
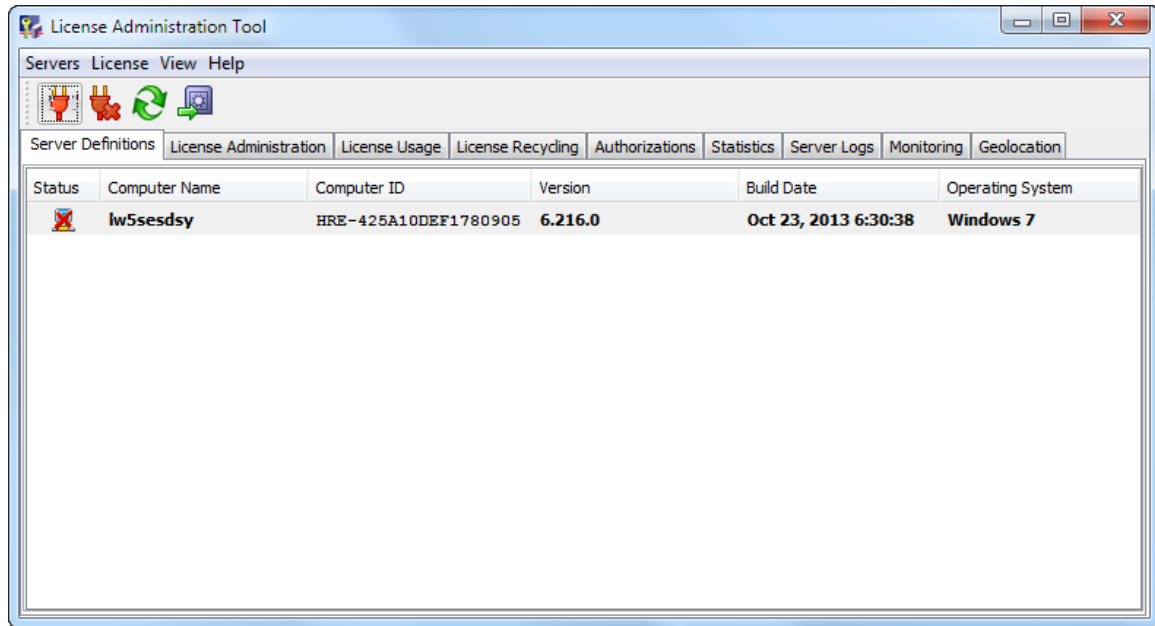
Pointing to the ⊠ icon displays the following message:

licensing port not configured; check server properties

3. Configure the license server.

- Select the `Servers - Properties` command and select the server name from the list.

- Or, point to the ⊠ icon, right-click and select the `Display properties` command.
- Or, double-click the line containing the computer name.

The **Server Configuration** dialog box appears:

You do not have to set any other options for the moment, but for information purposes here is a list of the information and options in the dialog box:

Server name: Name of the machine hosting the license server.

Server id: Computer id of the machine hosting the license server.

Software version: Internal software version number.

Build date: Internal software version build date.

Administration port: Listening port for the **License Administration Tool**.

Licensing port: The **Licensing port:** field is displayed in yellow, informing you that you can either accept the default port number (4085) or set another port number.

Set password... Clicking this button opens the **Administrative Credentials** dialog box which lets you set passwords required to administer your server using the **License Administration Tool**. When the passwords are already present, the button name is **Change passwords...**.

If needed, you must set the password by clicking the **Set password...** button and typing the new password for full access mode:

Once you have set the password, an additional field appears in the upper area allowing you to enter the current password for full access mode before modifying it. The field for entering the password for restricted access mode is also activated, allowing you to set or modify the password for restricted access mode, as illustrated:

<table>
<tr><td>Remote administration authorization</td><td>Allows you to deny access, or grant restricted or full access to a license server from a remote License Administration Tool installed on a remote computer.</td></tr>
</table>

Remote administration authorization

Allows you to deny access, or grant restricted or full access to a license server from a remote **License Administration Tool** installed on a remote computer.

Several **License Administration Tool** instances can be connected simultaneously to the same license server. Only one **License Administration Tool** instance can have full administration access to the license server: either the local **License Administration Tool** or the first one that connects to the license server remotely.

Furthermore, a local **License Administration Tool** takes priority over one started on a remote computer. When a local **License Administration Tool** connects to a local license server, if another administration tool is already connected in full mode, it is disconnected. This happens even if the **License Administration Tool** already connected is also a local one, irrespective of whether the tool is running in GUI or CLI mode.

- **full**: a remote **License Administration Tool** can connect to the license server and act with the same privileges as if it was running locally. This mode allows you complete control of the license server. Even if you have the right to fully administrate the license server, you may decide to connect to the server in restricted mode if you do not intend to make any modifications to the server. You connect to the server in this way using the `Servers - Connect restricted` command.
- **restricted**:

   This mode enables a remote **License Administration Tool** to connect to the license server but only in restricted mode, even if no other administration tool is connected to this license server.

   You can only set the password for restricted access mode if the password for full access mode has already been set.

   Restricted mode features the following limitations:

   - no modifications are allowed in the **Server Configuration** dialog box
   - no licenses can be deleted using the **License Administration** tab
   - no licenses can be recycled using the **License Recycling** tab

- creation and/or modification operations in the **Authorizations** tab are not allowed.

- **none**: remote administration is denied.

The following table summarizes which passwords are requested at connection time when administering a local server or a remote server, and remote administration is fully authorized:

	`Connect Command`	`Connect restricted Command`
No password set	No password requested	No password requested
Only password for Full mode set	Password for Full mode must be entered	No password requested
Both Full and Restricted mode passwords set	Password for Full mode must be entered If password for Restricted mode is entered, connection is forced in Restricted mode	Password for Full or Restricted mode must be entered

The following table summarizes which passwords are requested at connection time when administering a remote server, and remote administration is restricted:

	Connection from remote tool using `Connect Command`	**Connection from remote tool using `Connect restricted Command`**
No password set	No password requested Connection is forced in Restricted mode	No password requested
Only password for Full mode set	No password requested Connection is forced in Restricted mode	No password requested
Both Full and Restricted mode passwords set	Password for Full or Restricted mode must be entered Connection is forced in Restricted mode	Password for Full or Restricted mode must be entered

The following table summarizes which passwords are requested at connection time when administering a remote server, and remote administration is denied:

	Connection from remote tool using `Connect Command`	**Connection from remote tool using `Connect restricted Command`**
No password set	Connection denied	Connection denied
Only password for Full mode set	Connection denied	Connection denied
Both Full and Restricted mode passwords set	Connection denied	Connection denied

Mode is only taken into account at connection time. For example, if the mode is changed from **restricted** to **none**, the remote tools already connected in restricted mode will stay connected.

Checkbox status is only taken into account once the license server has been activated. Before activation, remote administration is allowed.

The **License Administration Tool** level must be higher than or equal to the license server level.

👉 **Note:** There's no connection timeout between a **License Administration Tool** remotely connected to a license server and this license server. However, if a network problem occurs or if the **License Administration Tool** runs from a laptop which disconnects, the connection between both processes is broken and the status in the **Server Definitions** tab returns to 🖳 . Once disconnected, the **License Administration Tool** doesn't automatically reconnect to the license server(s).

Enable offline license extraction	Check this box to enable offline license extraction when configuring the license server. This box is checked by default. Uncheck it to forbid offline license extraction.
Enable license usage statistics	Enables license usage statistics using the **Statistics** tab. If you check this checkbox, the license server collects statistical data. If you uncheck it, the license server will NOT collect statistical data, and data already collected will not be deleted.
Enable Automatic Recycling	Enables automatic recycling of all named user licenses which have not been used for at least 30 days. Using the **License Recycling** tab, you can manually recycle a named user license tied to a named user if this license has been used by this user for more than 30 days, and if the terms of the license contract (user retirement, etc.) allow you to do so. Enabling automatic recycling avoids manual license recycling. Irrespective of whether this option is activated, the license server stores and displays the last usage date of a given named user license in the `Last used at` field when detailed license usage information is requested:

As soon as it is granted to a named user, the last usage value is set. The value is updated every time the named user logs in or logs out (and also when internal heartbeats occur).

If you manually recycle a license, the last usage value is emptied.

The license server initiates automatic recycling every day at 00h00 UTC.

A license cannot be recycled if a given process is still using the license.

Casual usage named user licenses are not managed by this process: casual licenses are already automatically recycled at the beginning of every month.

The last usage value of offline named user licenses is initially set to the date of the extraction. The date is updated:

• at the exact time when the end of offline duration occurs

- at the exact time the user extends the offline license
- at the exact time the user manually restitutes the offline license.

If you install on top of a V6R2013x version or lower, the last usage value of all tied named user licenses is initialized with the new installation date, and the last usage value of all non-tied named user licenses is initialized to an empty value.

When a **License Administration Tool** manages a V6R2013x or lower license server, the `Last used at` field normally displayed when detailed license usage information is requested will not be displayed.

☞ **Note:** Note the following limitation: if the license server is not running at 00h00 UTC, automatic recycling of named user licenses is not postponed until the license server restart, but to the next 00h00 UTC.

License usage tracing...   Displays the **License Usage Tracing** dialog box allowing you to select the licenses for usage tracing:
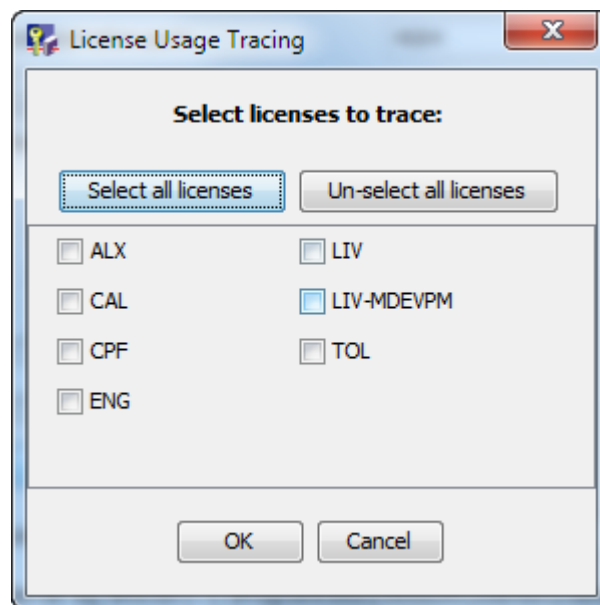
This dialog box is only useful after importing licenses.

You have to select at least one license to activate usage tracing. You can select individual licenses by checking the box next to the license(s), or select and unselect all the licenses using the **Select all licenses** and **Un-select all licenses** buttons respectively.

If activated, the traces of license request and detach operations and timeouts are logged and can be viewed using the **Server Logs** tab. Note that "timeout" means that the license server detached the license itself, because it was not contacted by the licensing client during the appropriate period.

☞ **Note:** Detaching of licenses granted to the Live Collaboration server is not traced by default. Instead, timeouts appear for these licenses unless you set the following variable:

`MX_NUL_FULL_USAGE_REPORT=true`

in the `enovia.ini` file (Windows) or `mxEnv.sh` (UNIX). For more information about this variable, see the Live Collaboration server documentation.

If the **Select all licenses** button is checked, then you enroll licenses for new features, the new features and checkboxes will be added automatically, and the boxes will be checked, which avoids having to access this dialog box again and click the **Select all licenses** button again.

If another **License Administration Tool** is already connected, the dialog box is in read-only mode and the contents are grayed out.

Mail configuration... Displays the **Mail Configuration** dialog box allowing you to send license server event notifications to specified mail addresses:

The fields are as follows:

- **SMTP server name:**: specify the name of the mail server to which the license server will send notifications. By default, the SMTP port number is 25. But the port number 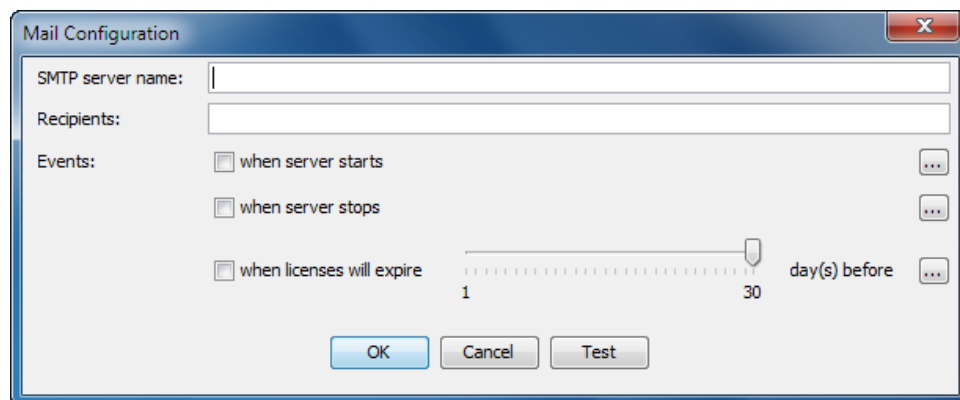can be set to a different value, separated from the name by a colon (:). For example: `MySMTPserver:26`. Note that SMTP servers requiring authentication and/or SSL are not supported.
- **Recipients:**: specify the e-mail addresses to which to the notifications will be sent. You can specify several e-mail addresses, each separated by commas (,).
- **Events:**: Mail notifications are available for the following types of events:

  - `when server starts`: a notification is sent when the license server starts
  - `when server stops`: a notification is sent when the license server stops
  - `when licenses will expire`: a notification is sent when a license is about to expire. When several licenses are about to expire, only one notification is sent. Notifications are sent at 1:00H AM server local time, each day the condition is still valid. You can set the number of days prior to license expiration by adjusting the slider to set a value between one and thirty days.

Every time a notification is sent, the information is also added to the server log.

The subject, content and footer in the notification of each event type can be customized by clicking the **...** button which displays the **Mail Template** dialog box, for example:

Click the **Test** button to send a mail notification to validate the SMTP server name and e-mail addresses.

Server log directory	Point to this option to display the path of the directory containing license server logs. The full pathname is displayed in a tooltip, and can also be selected when clicking on it (or double-clicking or triple-clicking). The path may be located either on the local machine or on a remote machine. The server log directory path can only be set in command line mode (using the -logDir option of the DSLicSrv batch command).
Standalone server	This option is checked by default and signifies that you are configuring a standalone server, not a server belonging to a failover cluster.
Failover cluster	Refer to *Configuring and Activating a Cluster in Failover Mode*.

4. Set the licensing port number, then click the **Apply** button.

The **Server Configuration** dialog box now looks like this:
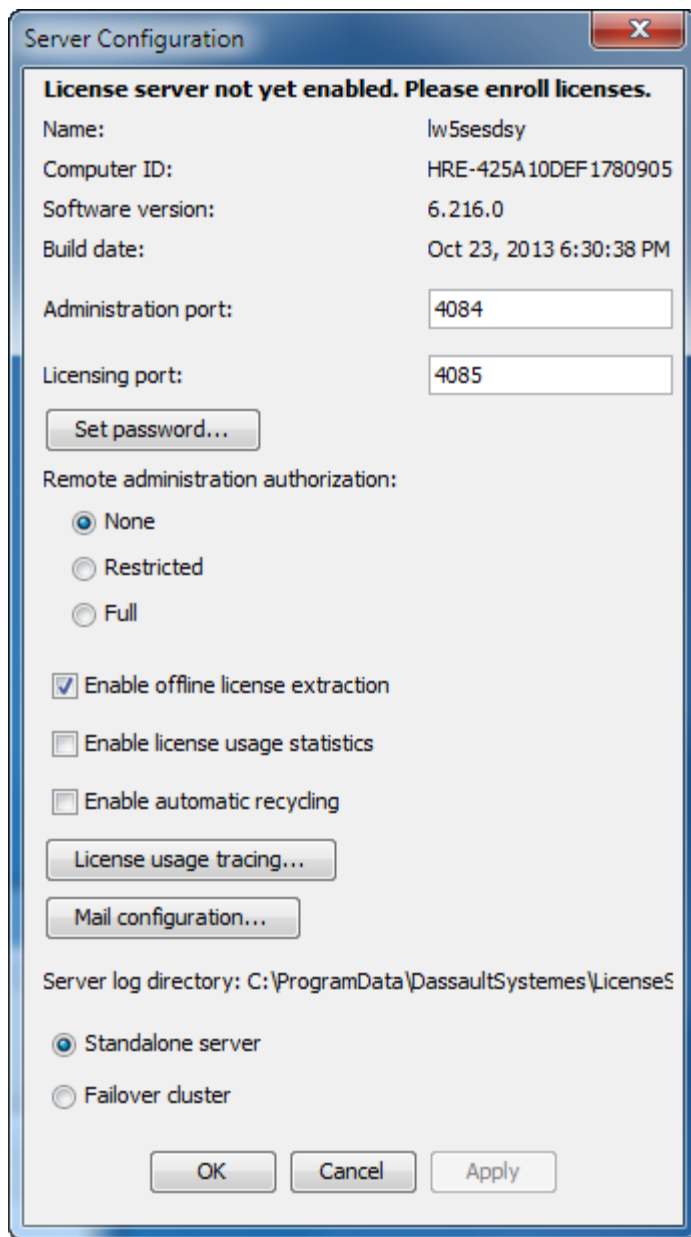
then click **OK**.

Pointing to the ⊠ icon now displays the following message:

No license enrolled

For the moment, the license server is configured but not activated. You cannot use the license server until it has been activated. To activate the license server, you must enroll a special license: the Activation license. However, this license is typically embedded in the `.LICZ` file containing the product licenses, so you don't have to manage it in a special way. If you have licenses for several editors, you will need several activation licenses.

5. Enroll the license as follows:

   a. Select the `License - Enroll` command or click the 🖳 icon.

The **Open** dialog box is displayed.

b. Select the appropriate `.LICZ` file containing your licenses, then click the **Open** button.

License keys and their activation key are provided in the form of archive files named something like this (with the `.LICZ` suffix):

`DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ`

The **License Enrollment** dialog box opens, containing messages confirming that the licenses have been enrolled on your server:

```
License enroll starting
lw5sesdsy: License enroll starting
Sending files to server lw5sesdsy

E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-1-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-2-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-3-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-4-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-5-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-6-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-7-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-8-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-9-of-9.LIC


lw5sesdsy : 9 licenses received
```
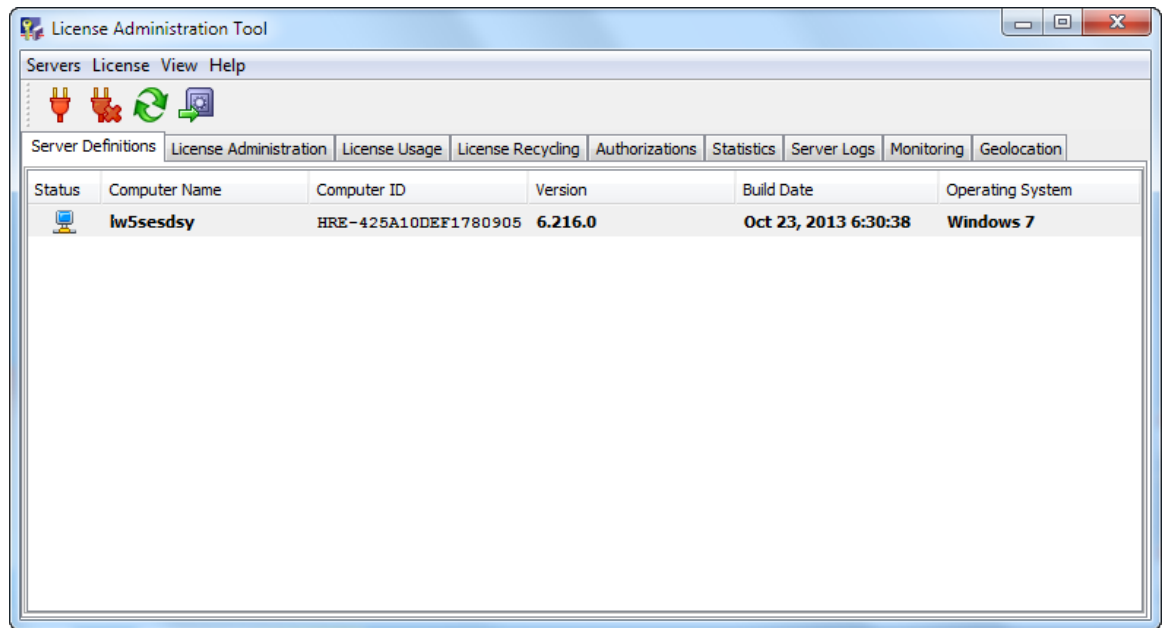
c. Click **OK**.

The 🖥 icon confirms that your server has been activated:

If you point to the 🖥 icon, a tooltip like this will be displayed:
server lw5sesdsy (10.232.69.69) connected
confirming that your license server is up and running.

☞ **Note:** Once you have configured and activated your server as a standalone server, you can no longer change your mind and configure it as part of a failover cluster. This is why the corresponding options are grayed out.

Warning: the Activation license included in `.LICZ` files with the product licenses is valid for only 30 days. You must activate the license server within 30 days after having received the license file. If you need to activate the server a second time, after the first 30 days, the original activation license included in the original `.LICZ` file will no longer be valid, in which case another activation license included in another `.LICZ` file is required. You only have to activate the license server once. The 30 days apply to the life of the activation license, not to how long the license server remains active.

Configuring and Activating a Cluster in Failover Mode

This section explains how to configure and activate your license servers in failover mode.

When configuring the license server, you can configure the server:

• as a standalone server
• or in failover mode as a member of a cluster.

In the preceding section of this guide, you learned how to configure a license server in standalone mode.

These choices are mutually exclusive. Once you have configured the server in either standalone or failover mode, you cannot modify your configuration. In particular, license keys are different.

Before you begin:

Before commencing this task, keep the following points in mind:

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- The objective of a failover configuration is to increase reliability, not capacity.
- You must install and start a license server on three different machines. A failover cluster of license servers is composed of exactly 3 computers. The three machines can be any supported Windows or UNIX machines: they do not have to be all Windows or all UNIX machines.
- In order to maximize quality of service, we recommend that the three machines be on the same subnetwork.
- At least two machines must be up and running and connected to each other in order to have a working failover cluster.
- The three machines have the same role: there is no master/slave concept.
- The three machines exchange messages every time license data is modified (for example, in case of new license enrolled or license granted to a client). Only the modifications are transmitted and not all license data.
- Each machine has its own log file management: the logs are not synchronized between failover members.

In our scenario, you will start the **License Administration Tool** on a license server on Windows, then build the cluster using three existing UNIX machines.

1. On any machine on which a license server has been installed, launch the **License Administration Tool** if it is not already launched.

   In our scenario, this tool is launched from a computer which will not be part of the cluster, but it can also be run from a future member of the cluster.
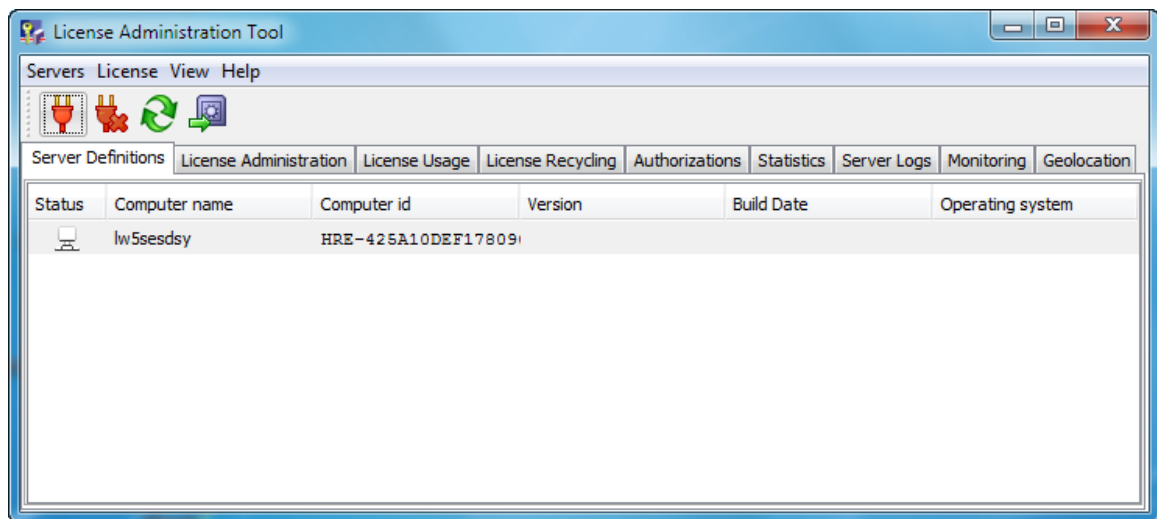
2. Create a connection to one of the license servers to be part of the cluster using the **Servers** > **New...** command.
3. Connect the **License Administration Tool** to the server.

   You must connect to the server to be able to use it. If you point to the 🖥 icon in the status column, next to the computer name, a message like this will be displayed:
   server xxx not connected

   To connect to the server:

   - Select the `Servers - Connect` command and select the server name from the list.

   - Or, point to the 🖥 icon, right click and select the `Connect` command.

   - Or, you can also click the 🔌 icon to connect all servers at the same time.

   The status now looks like this:

Status	Computer name	Computer id
✗	riffdsy	JFN-0370E018200EEA01

Pointing to the ✗ icon displays the following message:

licensing port not configured; check server properties

4. Configure the license server.

- Select the `Servers - Property` command and select the server name from the list.

- Or, point to the ✗ icon, right click and select the `Property` command.
- Or, double-click the line containing the computer name.

The **Server Configuration** dialog box appears:

You do not have to set any other options for the moment, but for information purposes here is a list of the information and options in the dialog box:

Server name: Name of the machine hosting the license server.

Server id: Computer id of the machine hosting the license server.

Software version: Internal DS License Server software version number.

Build date Internal software version build date.

Administration port:	Listening port for the **License Administration Tool**.
Licensing port:	The **Licensing port:** field is displayed in yellow, informing you that you can either accept the default port number (4085) or set another port number.
Set password...	Clicking this button opens the **Administrative Credentials** dialog box which lets you set passwords required to administer your server using the **License Administration Tool**. When the passwords are already present, the button name is **Change passwords...**.

If needed, you must set the password by clicking the **Set password...** button and typing the new password for full access mode:

Once you have set the password, an additional field appears in the upper area allowing you to enter the current password for full access mode before modifying it. The field for entering the password for restricted access mode is also activated, allowing you to set or modify the password for restricted access mode, as illustrated:

| Remote administration authorization | Allows you to deny access, or grant restricted or full access to a cluster in failover mode from a remote **License Administration Tool** installed on a remote computer. |

Furthermore, a local **License Administration Tool** takes priority over one started on a remote computer. When a local **License Administration Tool** connects to a local cluster, if another administration tool is already connected in full mode, it is disconnected. This happens even if the **License Administration Tool** already connected is also a local one, irrespective of whether the tool is running in GUI or CLI mode.

The three modes are:

- **full**: a remote **License Administration Tool** can connect to the cluster and act with the same privileges as if it was running locally. This mode allows you complete control of the cluster.

  A failover cluster is considered as a single logical server. Consequently, only one **License Administration Tool** can be connected in full mode to the failover. In other words, only one **License Administration Tool** gets full access to the three failover members at a given time.

  When a remote **License Administration Tool** is connected in full mode to one of failover members:

  - no other tool can connect to this member
  - no other tool can connect to both other members
  - only the remote tool connected in full mode to one member (or a local tool) can connect to both other members.

  When a local **License Administration Tool** connects to one failover member, it disconnects:

  - the remote tool connected in full mode to this member (if any)
  - the other local tool connected to this member (if any)
  - the remote tools connected in full mode to both other members (if any)
  - the local tools connected to both other members (if any).

Even if you have the right to fully administrate the cluster, you may decide to connect to the cluster in restricted mode if you do not intend to make any modifications to the cluster. You connect to the cluster in this way using the `Servers - Connect restricted` command.

The `Servers - Connect all` command connects to all the members of a cluster and only prompts you once to enter the cluster password.

- **restricted**:

  This mode enables a remote **License Administration Tool** to connect to the cluster but only in restricted mode, even if no other administration tool is connected to this cluster.

  You can only set the password for restricted access mode if the password for full access mode has already been set.

  Restricted mode features the following limitations:

  - no modifications are allowed in the **Server Configuration** dialog box
  - no licenses can be deleted using the **License Administration** tab
  - no licenses can be recycled using the **License Recycling** tab
  - creation and/or modification operations in the **Authorizations** tab are not allowed.

- **none**: remote administration is denied, except from both other members, for which **full** access is always granted.

The following table summarizes which passwords are requested at connection time when administering a local cluster or a remote cluster, and remote administration is fully authorized:

	`Connect Command`	`Connect restricted Command`
No password set	No password requested	No password requested
Only password for Full mode set	Password for Full mode must be entered	No password requested
Both Full and Restricted mode passwords set	Password for Full mode must be entered If password for Restricted mode is entered, connection is forced in Restricted mode	Password for Full or Restricted mode must be entered

The following table summarizes which passwords are requested at connection time when administering a remote cluster, and remote administration is restricted:

	Connection from remote tool using `Connect` Command	Connection from remote tool using `Connect restricted` Command
No password set	No password requested Connection is forced in Restricted mode	No password requested
Only password for Full mode set	No password requested Connection is forced in Restricted mode	No password requested

	Connection from remote tool using `Connect` Command	Connection from remote tool using `Connect restricted` Command
Both Full and Restricted mode passwords set	Password for Full or Restricted mode must be entered Connection is forced in Restricted mode	Password for Full or Restricted mode must be entered

The following table summarizes which passwords are requested at connection time when administering a remote cluster, and remote administration is denied:

	Connection from remote tool using `Connect` Command	Connection from remote tool using `Connect restricted` Command
No password set	Connection denied	Connection denied
Only password for Full mode set	Connection denied	Connection denied
Both Full and Restricted mode passwords set	Connection denied	Connection denied

Mode is only taken into account at connection time. For example, if the mode is changed from **restricted** to **none**, the remote tools already connected in restricted mode will stay connected.

Checkbox status is only taken into account once the license server has been activated. Before activation, remote administration is allowed.

The **License Administration Tool** level must be higher than or equal to the license server level.

☞ **Note:** There's no connection timeout between a **License Administration Tool** remotely connected to a license server and this license server. However, if a network problem occurs or if the **License Administration Tool** runs from a laptop which disconnects, the connection between both processes is broken and the status in the

Server Definitions tab returns to 🖳. Once disconnected, the **License Administration Tool** doesn't automatically reconnect to the license server(s).

Enable license usage statistics	Enables license usage statistics using the **Statistics** tab. If you check this checkbox, the license server collects statistical data. If you uncheck it, the license server will NOT collect statistical data, and data already collected will not be deleted.
Enable Automatic Recycling	Enables automatic recycling of all named user licenses which have not been used for at least 30 days. Using **License Recycling** tab, you can manually recycle a named user license tied to a named user if this license has been used by this user for more than 30 days, and if the terms of the license contract (user retirement, etc.) allow you to do so. Enabling automatic recycling avoids manual license recycling. Irrespective of whether this option is activated, the license server stores and displays the last usage date of a given named user license in the `Last used at` field when detailed license usage information is requested:

As soon as it is granted to a named user, the last usage value is set. The value is updated every time the named user logs in or logs out (and also when internal heartbeats occur).

If you manually recycle a license, the last usage value is emptied.

The license server initiates automatic recycling every day at 00h00 UTC. In the context of a failover cluster, the action is triggered on each member, and is not propagated to the others. If a member is down at 00h00 UTC, the action cannot be triggered on this member. But when this member restarts, it will get appropriate data from the other members during startup synchronization in the usual way.

A license cannot be recycled if a given process is still using the license.

Casual usage named user licenses are not managed by this process: casual licenses are already automatically recycled at the beginning of every month.

The last usage value of offline named user licenses is initially set to the date of the extraction. The date is updated:

- at the exact time when the end of offline duration occurs
- at the exact time the user extends the offline license
- at the exact time the user manually restitutes the offline license.

If you install on top of V6R2013x or a lower version, the last usage value of all tied named user licenses is initialized with the new installation date, and the last usage value of all non-tied named user licenses is initialized to an empty value.

When a **License Administration Tool** manages a V6R2013 or lower license server, the `Last used at` field normally displayed when detailed license usage information is requested will not be displayed.

☞ **Note:** Note the following limitation: if the license server is not running at 00h00 UTC, automatic recycling of named user licenses is not postponed until the license server restart, but to the next 00h00 UTC.

License usage tracing...   Displays the **License Usage Tracing** dialog box allowing you to select the licenses for usage tracing:

You have to select at least one license to activate usage tracing. You can select individual licenses by checking the box next to the license(s), or select and unselect all the licenses using the **Select all licenses** and **Un-select all licenses** buttons respectively.

If activated, the traces of license request and detach operations and timeouts are logged and can be viewed using the **Server Logs** tab. Note that "timeout" means that the license server detached the license itself, because it was not contacted by the licensing client during the appropriate period.

☞ **Note:** Detaching of licenses granted to the Live Collaboration server is not traced by default. Instead, timeouts appear for these licenses unless you set the following variable:

```
MX_NUL_FULL_USAGE_REPORT=true
```

in the `enovia.ini` file (Windows) or `mxEnv.sh` (UNIX). For more information about this variable, refer to the Live Collaboration server documentation.

If the **Select all licenses** button is checked, then you enroll licenses for new features, the new features and checkboxes will be added automatically checkboxes, and the boxes will be checked, which avoids having to access this dialog box again and click the **Select all licenses** button again.

If another **License Administration Tool** is already connected, the dialog box is in read-only mode and the contents are grayed out.

Mail configuration... Displays the **Mail Configuration** dialog box allowing you to send license server event notifications to specified mail addresses:

The fields are as follows:

- **SMTP server name:**: specify the name of the mail server to which the license server will send notifications. By default, the SMTP port number is 25. But the port number can be set to a different value, separated from the name by a colon (:). For example: `MySMTPserver:26`. Note that SMTP servers requiring authentication and/or SSL are not supported.
- **Recipients:**: specify the e-mail addresses to which to the notifications will be sent. You can specify several e-mail addresses, each separated by commas (,).
- **Events:**: Mail notifications are available for the following types of events:

    - `when server starts`: a notification is sent when the license server starts
    - `when server stops`: a notification is sent when the license server stops
    - `when failover member is isolated`: in a failover configuration, a notification can optionally be sent when a member cannot connect to both other members for a given number of minutes. The default value is 5mins. and can be set from 1min. to 60mins, in 1min. increments. The notification is sent by the isolated member, not by the other two members. If the issue is related to the network itself, the notification might not be received by the SMTP server. The notification is sent only once while the member is isolated, no matter how long the member remains isolated.
    - `when licenses will expire`: a notification is sent when a license is about to expire. When several licenses are about to expire, only one notification is sent. Notifications are sent at 1:00H AM server local time, each day the condition is still valid. You can set the number of days prior to license expiration by adjusting the slider to set a value between one and thirty days. In a failover configuration, one notification is sent by each member, so three notifications will be received for the same event.

Every time a notification is sent, the information is also added to the server log.

The subject, content and footer in the notification of each event type can be customized by clicking the **...** button which displays the **Mail Template** dialog box, for example:

Click the **Test** button to send a mail notification to validate the SMTP server and e-mail addresses.

Server log directory	Point to this option to display the path of the directory containing license server logs. The path may be located either on the local machine or on a remote machine. The server log directory path can only be set in command line mode (using the `-logDir` option of the `DSLicSrv` batch command).
Standalone server	This option is checked by default and signifies that you are configuring a standalone server, not a server belonging to a failover cluster.
Failover cluster	Check this option to configure the server as member of a cluster in failover mode.

5. Set the **Failover port:** number.

   The default is 4086.

6. Check the **Failover cluster** option.

   The lower section of the **Server Configuration** dialog box now looks like this:
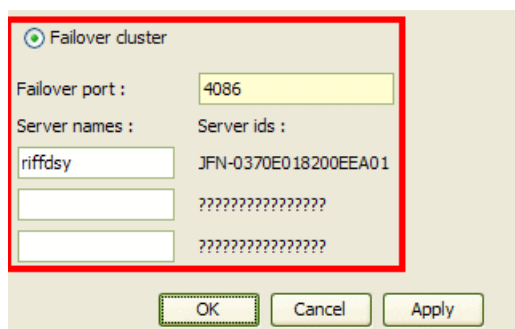
7. Specify the remaining server names.

A failover cluster comprises three server names. Note that your server name and its server id are already declared. As you type in the names of the other two servers, the names appear in red while the software checks that the server machines exist. The letters are then displayed normally once the existence of the server machine has been checked.

Once you have defined three valid members, a **...** button is displayed after each server id.

8. Click the **Apply** button.

The **Server Configuration** dialog box now looks like this (note the presence of the **...** button after each server id):

Click one of the **...** buttons. The **Modify Cluster Member** dialog box appears:

For more information about modifying your cluster, refer to *Maintaining Continuous Failover Cluster Operation*.

9. Click the **OK** button.

The **License Administration Tool** now contains the following:

The cluster is represented as a single connection comprising three machines. The first machine (in bold) is connected, the others (not in bold) are not connected.

10. Enroll the license for the cluster.

Pointing to the ![icon] icon now displays the following message:

No license enrolled

For the moment, the failover cluster has been created and configured but not activated. You cannot use the failover cluster until it has been activated. To activate it, you must enroll your product license `.LICZ` file which contains the Activation license.

☞ **Note:** Note that this is a special failover cluster license. When ordering the failover cluster license, you must provide the computer id of each of the three machines.

a. Select the `License - Enroll` command or click the ![icon] icon.

The **Open** dialog box is displayed.

b. Select the appropriate `.LICZ` file containing your licenses, then click the **Open** button.

License keys and their activation key are provided in the form of archive files named something like this (with the `.LICZ` suffix):

`DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ`

The **License Enrollment** dialog box opens, confirming that the server has been activated and cluster licenses have been enrolled on your server.

c. Click the **OK** button.

The green background confirms that your failover cluster has been activated and is now up and running:

If you point to the green background, a message like this will be displayed:

cluster is up

confirming that your failover cluster is up and running.

☞ **Note:** Once you have configured and activated your cluster, you can no longer change your mind and try to configure one of the three machines as a standalone server. This is why the corresponding options are grayed out when you display the cluster properties:

Enrolling the licenses on one cluster member also enrolls them automatically on the other cluster members.

11. Consult the **Status** column to evaluate cluster status.

The first server name is in bold because you connected to it when building the failover cluster. The other server names are not in bold: they are members of the cluster but you have not connected to them.

Note that the presence of a server in a cluster does not stop you from being able to connect to it to benefit from the other services provided by the **License Administration Tool** not directly involved in cluster license management, for example logging and monitoring.

A symbol like this:
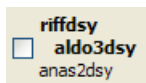
displayed in certain tabs indicates that a cluster is present. Servers to which you are connected are in bold. Check the option button to use the relevant function with the cluster.

Furthermore, in certain tabs, the servers can be chosen from a pull-down list. The list contains servers to which you are connected.

The meaning of colors and symbols is described in the following table:

Symbol	Meaning
	The cluster member is connected to the **License Administration Tool**.
	The cluster member is connected to the **License Administration Tool** in read-only mode.
	The cluster member is NOT connected to the **License Administration Tool**.
	A communications link has been established between two members of the cluster.
?	No information is available about the communication status between both members. Connect to at least one of both members to determine the status of this particular link.
	A green background indicates that the cluster is up and running. At least two links exist.
	A yellow background indicates that the cluster is up and running, but indicate that there is a problem: only one link exists. For example, one of the three servers may be unreachable for a variety of reasons, but the cluster remains up and running as long as at least two servers can exchange information between them.
	Red icons indicate IN ALL CASES that the cluster is down. No links exist.

The following table illustrates some typical examples of cluster status symbols that may be displayed during cluster operation:

This symbol...	means that...
	You have not connected to a cluster member: cluster status is undetermined.
	The cluster is up and running. One of the servers is connected to the other two, but we don't know if these two servers are inter-connected or not. Not enough information exists about the link between the non-connected servers.
	The cluster is still up and running but one of the servers is not linked to any other (maybe it was shut down or is unreachable over the network for some reason or other). Even though two up and running servers are enough to keep the cluster up, if another server goes down, the cluster will go down also.
	The cluster is down: no links exist.

In case one failover member goes down and can no longer start, it is possible to get failover data (configuration and license keys) from one of the remaining working members of the cluster:

1. Ensure that remote administration is enabled on working members
2. Ensure that no password is set on working members.
3. Run the following command on the member which refuses to start:

```
DSLicSrv -initServer -adminPort AdminPortNumber -fromHost
WorkingMemberName -force
```

where `AdminPortNumber` is the administration listening port number and `WorkingMemberName` is the name of one of the remaining working cluster members from which you retrieve the failover data.

4. Start the license server on this computer.

Maintaining Continuous Failover Cluster Operation

This section describes the different operations you can perform following failure of one of the members of a DS License Server cluster, without having to stop the cluster.

In the event of a hardware failure involving a member of a DS License Server failover cluster, the cluster remains active, and it is not necessary to stop the cluster in order to replace the failed member by a new one.

Remember that, if one of the three members of a failover cluster goes down, the failover itself remains active and can continue to serve licensing clients without interruption. The status of the failover is yellow in the **License Administration Tool**.

Even if the replacement can be planned, the fact that the failover cluster is down even only for a few minutes can impact operations. You can perform the following actions for the failed member, in order to restore the failover status to green, without stopping the failover cluster:

• replace a failover member
• change the hostname of a failover member
• replace the network card hosting the computerID of a failover member
• repair a corrupted license server database of a failover member.

☞ **Note:** Once a computer has been excluded from a failover cluster, it has to be re-initialized in order to be re-used as a standalone server or as a member of a failover (even if it is the same as before).

Replace a Failover Member

Before you begin: In the following scenario, let's assume you have a failover cluster with the following three cluster members, M1, M2 and M3:

- M1: `iclin1plp`
- M2: `icaix1plp`
- M3: `iclin3plp`

Let's assume member M1 is broken and must be replaced with member M4.

1. Install a DS License Server from scratch on member M4.
2. Obtain replacement failover license keys for the computer IDs M2, M3 and M4.
3. From failover member M2, start the **License Administration Tool**.
4. In the **Server Configuration** dialog box for your cluster, click the **...** button after member M1:
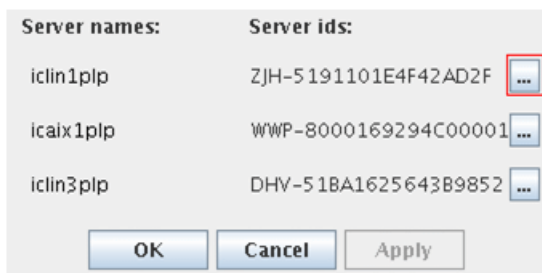
The **Modify Cluster Member** dialog box appears.

5. Check the option **Replace computer with** and enter the name of M4, for example `nuq32plp`, which will replace computer `iclin1plp`, as illustrated below:
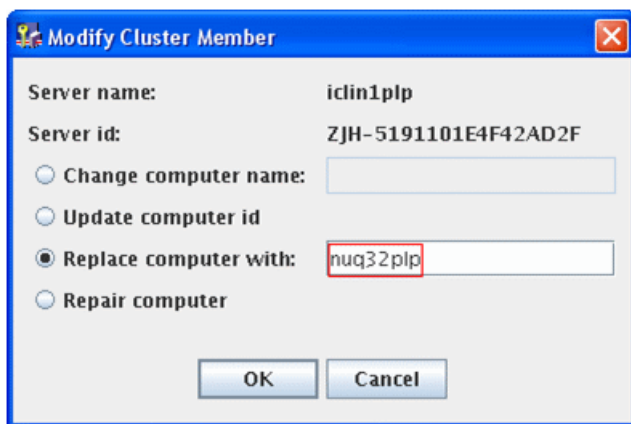
Then, click the **OK** button.

The following warning is displayed:

Warning: Enrolled licenses will be invalidated within 24 hours. You should be ready after this operation to enroll a full set of licenses. Do you want to proceed?

Click the **Yes** button.

Your modified cluster now contains the following members:

- M4: `nuq32plp`
- M2: `icaix1plp`
- M3: `iclin3plp`

6. Enroll new licenses generated for the cluster `nuq32plp-icaix1plp-iclin3plp`.

   New cluster licenses are needed because one of the three computerIDs in the failover cluster has changed. For practical reasons, we strongly recommend that you obtain the new licenses BEFORE changing the computerID of a cluster member.

   👉 **Note:** Keep in mind that as long as two members are active, the failover cluster remains operational. As soon as one computerID of the failover is changed, the cluster remains up but the old licenses are considered still valid for a maximum duration of 24 hours only. The new licenses containing the replacement computerID must be enrolled during this 24-hour period. Obtaining the new licenses before is critical.

   After enrolling the new licenses, your new cluster licenses are `Active` but the previous licenses remain and are `Invalid` (because generated for M1, M2 and M3) and highlighted in red:

   Right-click the old licenses and select **Delete** to delete them.

   At any time during these steps, licensing clients were able to receive licenses.

Rename a Member

Before you begin: In the following scenario, let's assume you have a failover cluster with the following three cluster members, M1, M2 and M3:

- M1: `icwvc1plp`
- M2: `icaix1plp`
- M3: `icw8s4plp`

Let's assume you need to rename M1 from `icwvc1plp` to `icw7c1plp`.

1. Stop failover cluster member M1 `icwvc1plp`.
2. Rename M1 and restart the computer.
3. Install a DS License Server from scratch on member M1.
4. From failover member M2, start the **License Administration Tool**.
5. In the **Server Configuration** dialog box for your cluster, click the **...** button after member M1:
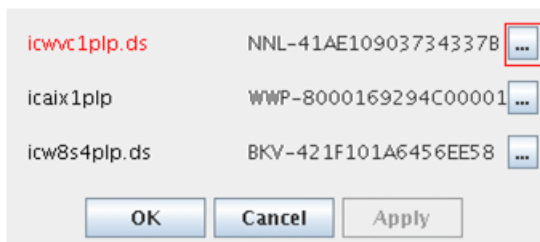
The **Modify Cluster Member** dialog box appears.

6. Check the option **Change computer name** and enter the name of computer `icw7c1plp` as illustrated below:
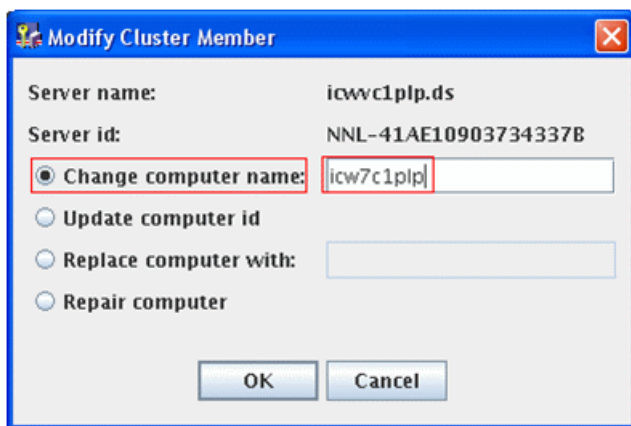
Then, click the **OK** button.

Your modified cluster now contains the following members:

- M1: `icw7c1plp`
- M2: `icaix1plp`
- M3: `icw8s4plp`

☞ **Note:** This scenario can also be useful if you want to change hardware but keep the network card on the replaced computer.

☞ **Note:** You do not need new license keys because the three computer IDs remain the same.

Replace the Network Card of a Failover Member

Before you begin: In the following scenario, let's assume you have a failover cluster with the following three cluster members, M1, M2 and M3:

- M1: `icwvc1plp`
- M2: `icaix1plp`
- M3: `icw8s4plp`

1. Stop failover member M1 and replace the network card of M1 with a new network card.
2. Install a DS License Server from scratch on member M1.

3. Obtain replacement failover license keys for the computer IDs M1, M2 and M3.

4. From failover member M2, start the **License Administration Tool**.

5. In the **Server Configuration** dialog box for your cluster, click the **...** button after member M1:

Server names:	Server ids:	
icwvc1plp.ds	QTR-421410145E64F346	...
icaix1plp	WWP-8000169294C00001	...
icw8s4plp.ds	BKV-421F101A6456EE58	...

OK   Cancel   Apply
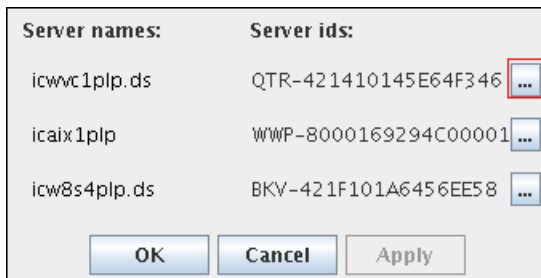
The **Modify Cluster Member** dialog box appears.

6. Check the option **Update computer id** as illustrated below:
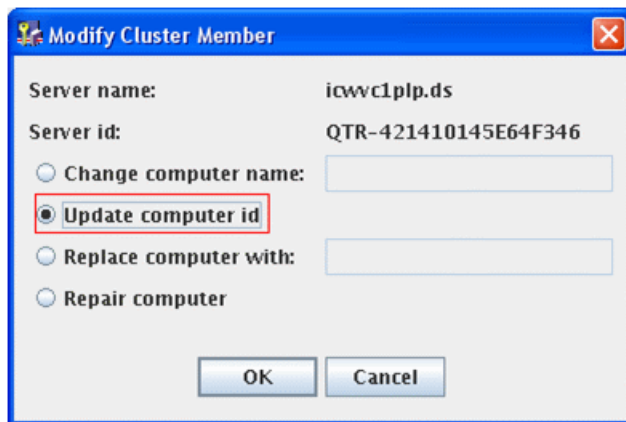
Modify Cluster Member

Server name: icwvc1plp.ds

Server id: QTR-421410145E64F346

○ Change computer name:

● Update computer id

○ Replace computer with:

○ Repair computer

OK   Cancel

Then, click the **OK** button.

The following warning is displayed:

Warning: Enrolled licenses will be invalidated within 24 hours. You should be ready after this operation to enroll a full set of licenses. Do you want to proceed?
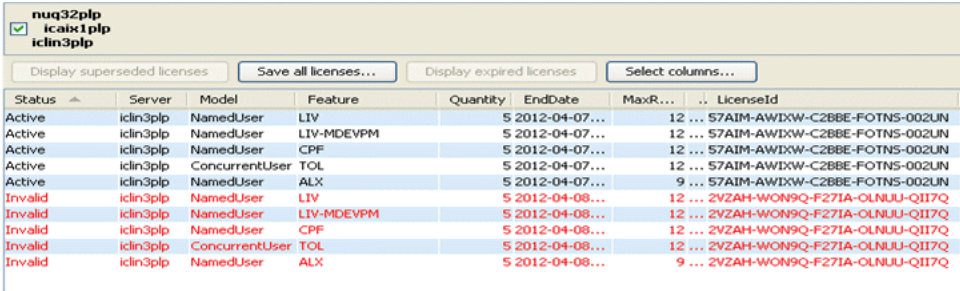
Click the **Yes** button.
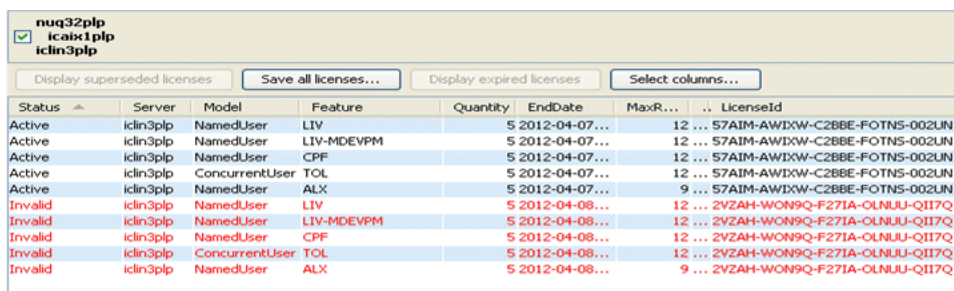
Your cluster will be updated with a new computer id for member M1.

7. Enroll new licenses generated for the cluster.

New cluster licenses are needed because one of the three computerIDs in the failover cluster has changed. For practical reasons, we strongly recommend that you obtain the new licenses BEFORE changing the computerID of a cluster member.

☞ **Note:** Keep in mind that as long as two members are active, the failover cluster remains operational. As soon as one computerID of the failover is changed, the cluster remains up but the old licenses are considered still valid for a maximum duration of 24 hours only. The new licenses containing the replacement computerID must be enrolled during this 24-hour period. Obtaining the new licenses before is critical.

After enrolling the new licenses, your new cluster licenses are `Active` but the previous licenses remain and are `Invalid` and highlighted in red:

Right-click the old licenses and select **Delete** to delete them.

At any time during these steps, licensing clients were able to receive licenses.

Repair Corrupted Data of a Member

Before you begin: In the following scenario, let's assume you have a failover cluster with the following three cluster members, M1, M2 and M3:

- M1: `nuq32plp`
- M2: `icaix1plp`
- M3: `iclin3plp`

Let's also assume that license data on cluster member M2 is corrupted.

1. Stop failover cluster member M2.
2. Install a DS License Server from scratch on member M2.
3. From failover member M1, start the **License Administration Tool**.
4. In the **Server Configuration** dialog box for your cluster, click the **...** button after member M2:

The **Modify Cluster Member** dialog box appears.

5. Check the option **Repair computer** as illustrated below:
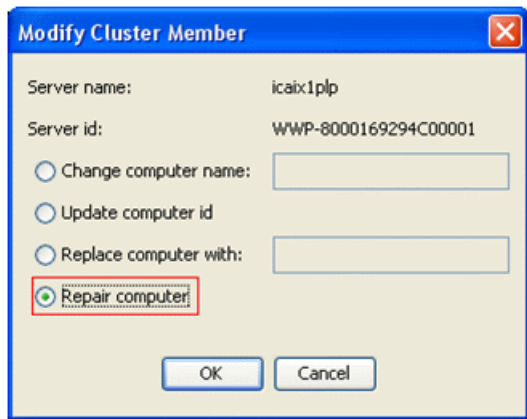
Click the **OK** button to repair the corrupted data.

☞ **Note:** You do not need new license keys because the three computer IDs remain the same.

Starting and Stopping the DS License Server

Tools are provided to start and stop the DS License Server.

1. The first and simplest way is to use the standard Windows Services management tool and stop the **DS License Server** Windows service.

   When you installed the DS License Server, a Windows service named **DS License Server** was created and configured automatically to start the license server. The service guarantees that the DS License Server is always started automatically when you log on:
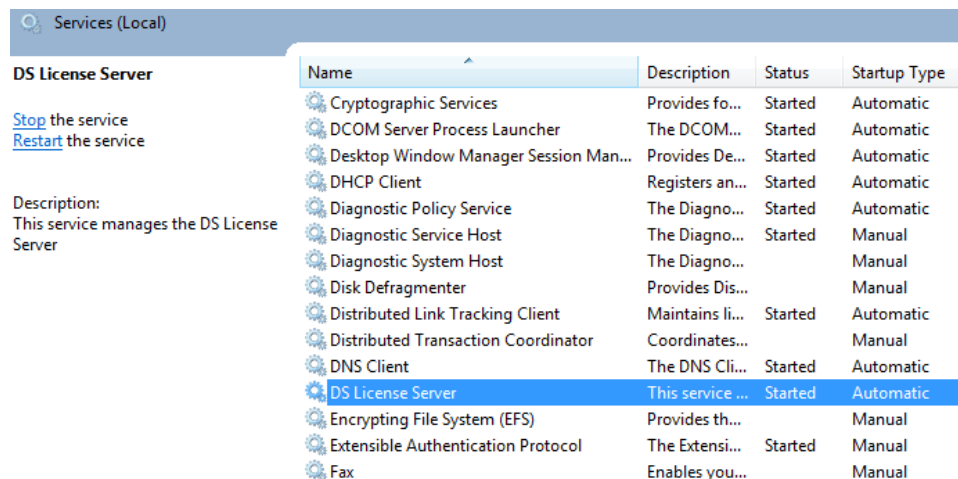
Since the DS License Server complies with Windows Service standards, you can also start and stop the **DS License Server** service using the following commands in an elevated command prompt:

```
net start "DS License Server"
net stop "DS License Server"
```

Information and errors related to the **DS License Server** service are logged in the Windows event log and can be viewed using the Event Viewer, under License Server in the Source column in the Application section, as illustrated below:
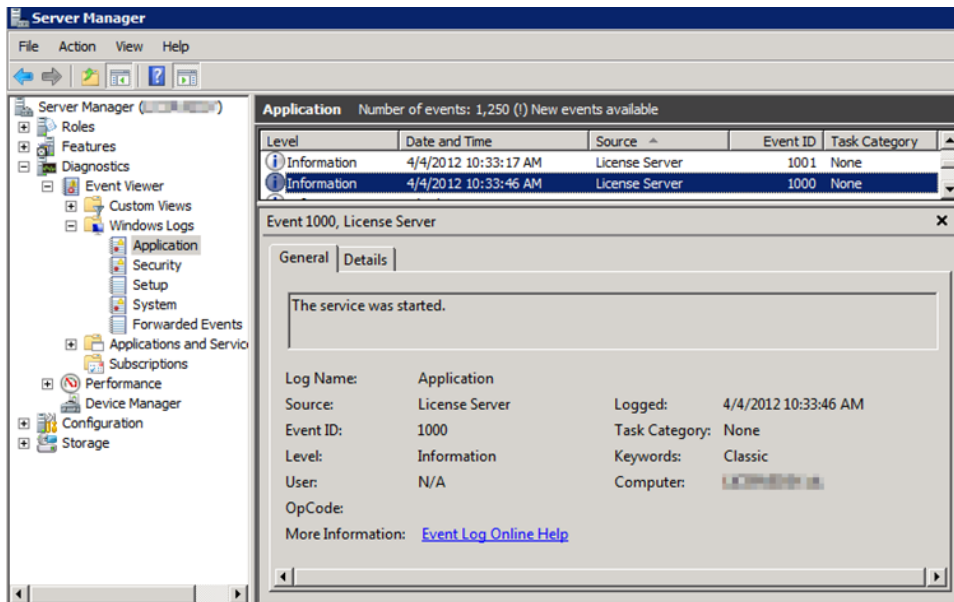
2. Additionally, particularly when you are administering a remote license server, to stop the license server, you can also select `Start - All Programs - DS License Server - License Server Administration` to launch the **License Administration Tool** if it is not already launched:
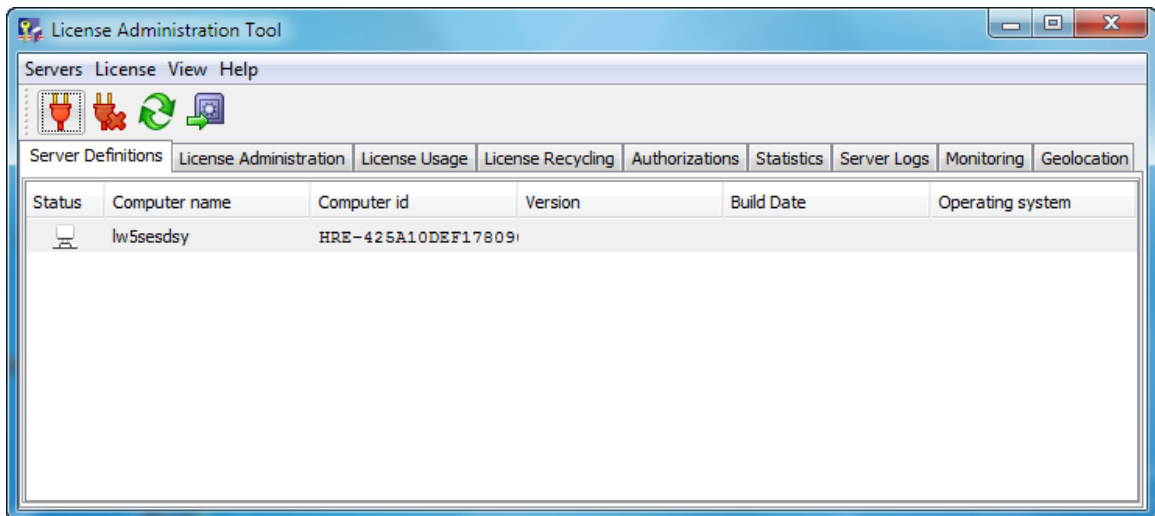
3. Connect to the license server by pointing to the ⬜ icon, right-clicking and selecting the `Connect` command:

4. Select the `Servers - Stop` command and select the server name.
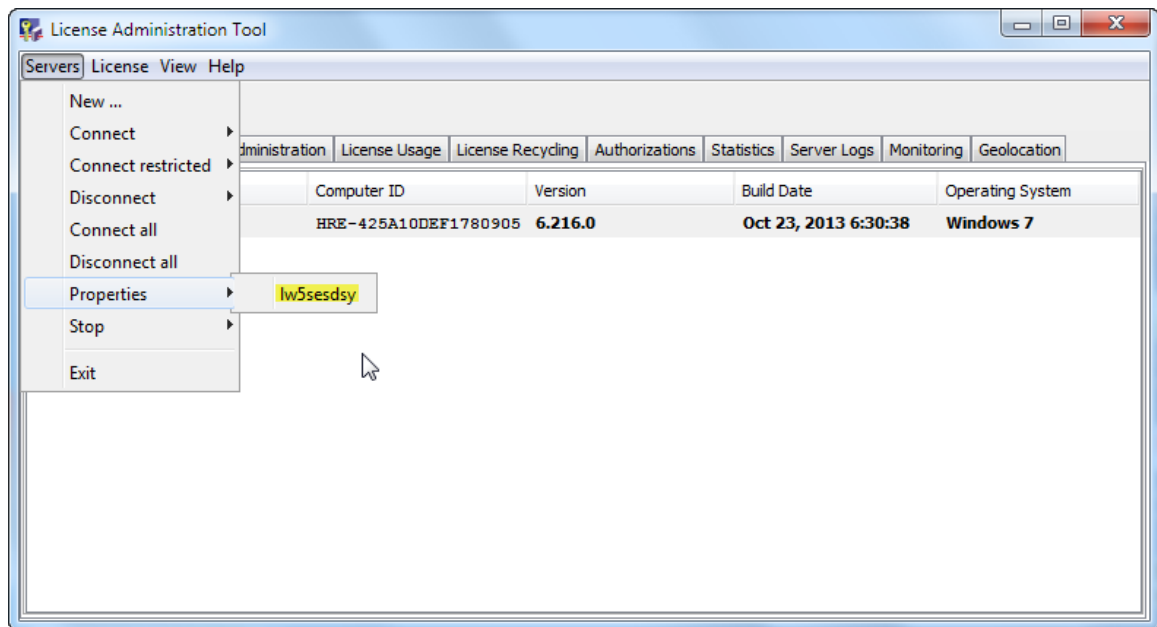
A dialog box appears prompting you to confirm that you want to stop the server:
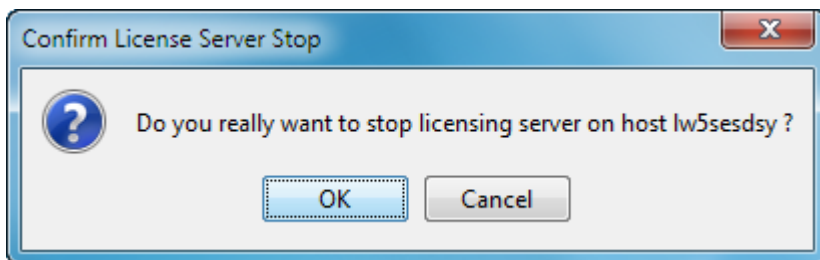
5. Click **OK**.

You are immediately disconnected from the server:
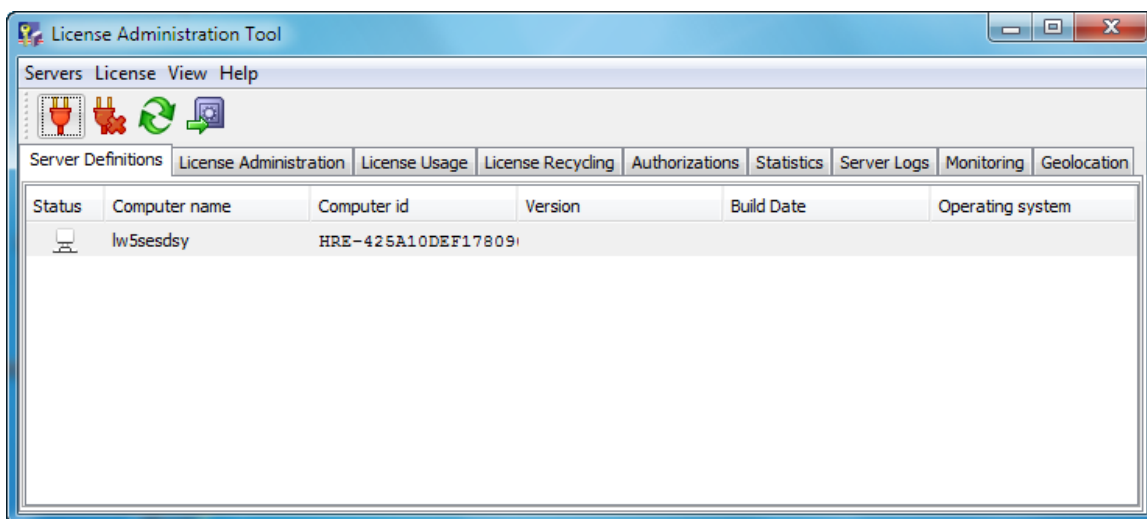
If you try to connect to the server, the following dialog box appears:
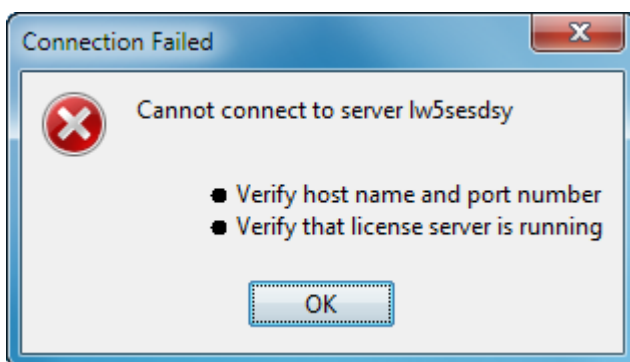
prompting you to check the server hostname and port number, and to check if the server is running, which is not the case, because it has just been stopped. Click **OK** to access the license server configuration parameters enabling you to check the server hostname and port number. Click **Cancel** to exit.

If you access the Windows services and refresh the list, you will notice that the **DS License Server** service has been stopped.

☞ **Note:** The **License Administration Tool** remains active because you can use it to connect to a remote server even if your local license server has been stopped.

6. To start the license server again, restart the **DS License Server** using the Windows Services GUI tool.

☞ **Note:** On UNIX, start the license server by running the following command, for example on AIX:

```
/usr/DassaultSystemes/DSLicenseServer/aix_a64/code/bin/DSLicSrv
-startServer
```

and stop the license server using the command:

```
/usr/DassaultSystemes/DSLicenseServer/aix_a64/code/bin/DSLicSrv
-stopServer
```

or the `Servers - Stop` command using the **License Administration Tool**.

Configuring Clients

Once your license server is up and running, and your licenses have been enrolled, you must configure the license clients.

1. On Windows, on each client computer, create the following directory:

   `C:\ProgramData\DassaultSystemes\Licenses`

   On UNIX, create the following directory:

   `/var/DassaultSystemes/Licenses`

2. Go to the directory and create an ANSI file (multi-bytes such as UNICODE are not supported) named:

   `DSLicSrv.txt`

3. Edit the file to declare the license server to which the client can connect.

   The syntax of the declaration is as follows:

   `servername:portnumber`

   The server name can be declared as:

   • a simple hostname, for example: `lw5sesdsy:4085`
   • a full qualified domain name, for example: `lw5sesdsy.dsy.com:4085`
   • an IPV4 address, for example: `10.232.70.1:4085`
   • an IPV6 address, for example: `[2a00:4b00:220:172::103]:4085`

   The port number is the license server listening port, not the administration port.

   Note that if the license server is on the same computer as the client computer, you can use the special keyword localhost instead of the computer name, for example:

   `localhost:4085`

   ☞ **Note:** The syntax for failover servers is different. The three failover servers must all be referenced on the same line as follows:

   `server1:4085,server2:4085,server3:4085`

By default, load balancing of the three failover members is performed automatically by the licensing client code. At startup, the licensing client process selects randomly the failover member to contact from the three members declared. If the first selected member is down, the second member is randomly selected, and so forth. This ensures that the three members are statistically contacted by the same number of clients and results in automatic load balancing on the three members.

However, it is also possible to specify the order of priority in which failover members are contacted by the licensing client, replacing randomization by an explicit order defined by the administrator. This can be useful in the following cases, for example:

*   one member is more (or less) powerful than the others
*   one member is located much closer to (or further from) the licensing clients than the others
*   one member cannot be reached due to proxy constraints
*   one member is temporarily down.

Note that you cannot mix both automatic and manual configurations: in other words, the three failover members are either randomly accessed or are accessed through the specified order. So you cannot, for example, declare the first member then set random access to the remaining two members.

To explicitly specify an order of priority order between the failover members, use the following separator:

```
>
```

instead of:

```
,
```

which is reserved for automatic load balancing.

The following declaration is valid, for example:

```
licmbr1:4085>licmbr2:4085>licmbr3:4085
```

4. If several logical (i.e. standalone or failover) license servers need to be accessed, add a new line for each logical license server.

    In this context, when a client requests a license and this license is not already granted by one of the declared logical servers, then the order in which the logical license servers is declared is observed: if a license is available on the first declared logical server, this one is taken; if not, if a license is available on the second declared logical server, then this one is taken, and so forth.

5. Optionally, check that the file is correctly configured.

    The license client-side `DSCheckLS` command parses the `DSLicSrv.txt` file to check license server availability, and reports errors if, for example, the file is incorrectly configured. For more information, refer to the documentation of your license client product.

Communicating through Forward and Reverse Proxies

The machine hosting the **License Administration Tool** can communicate with a license server located behind a forward proxy, and the license client and the **License Administration Tool** can communicate with a license server located behind a reverse proxy, as explained in the following sections.

Implement a Forward Proxy for the License Administration Tool

The machine hosting the **License Administration Tool** can communicate with a license server located behind a forward proxy.

1. Configure the forward proxy in HTTPS mode.

    ☞ **Note:** All of the following configuration examples reflect the configuration of an Apache 2.2 forward proxy, purely for illustration purposes, and are in no way intended to reflect other proxy configurations.

    Add the following lines to the `httpd.conf` file:

    ```
    ProxyRequests On
    ProxyVia On
    <Proxy *>
    Order deny,allow
    Allow from all
    </Proxy>
    AllowCONNECT 4084 4085
    ```

    where the `AllowCONNECT` command references the licensing and administration tool ports.

2. Start the **License Administration Tool**.
3. Select the `Servers - New` command.

    The **License Server Connection Parameters** dialog box appears:
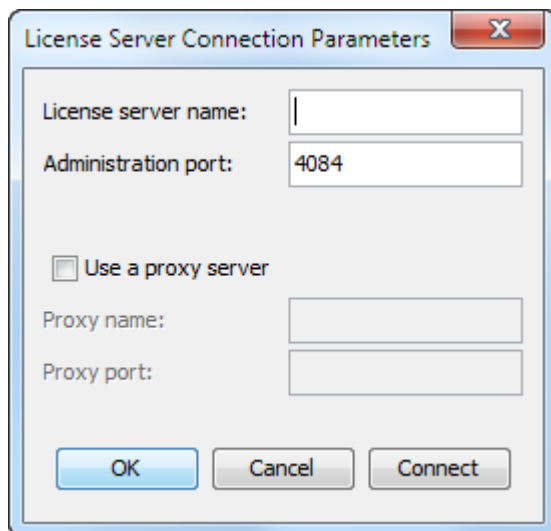
4. Enter the name of the license server (the name of the machine hosting the server, typically), set the listening port number (default is 4084), then check the option **Use a proxy server** and enter the proxy name and proxy port number, then click OK.
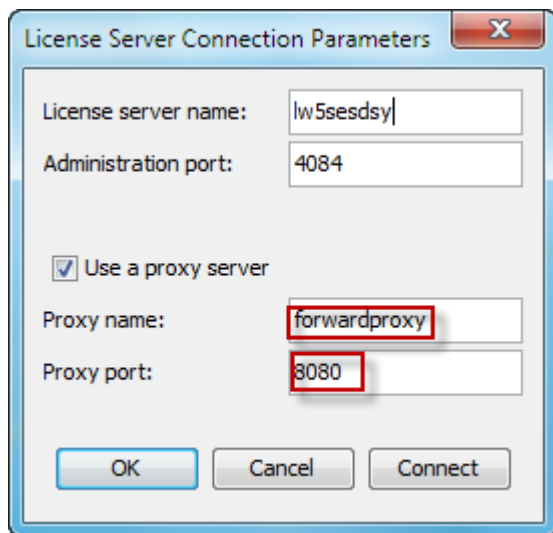
The **License Administration Tool** can now communicate with a license server located behind a forward proxy.

Implement a Reverse Proxy for the DS License Server

The license client and the **License Administration Tool** can also communicate with a license server located behind a reverse proxy.

1. Configure the reverse proxy in HTTPS mode and map the communications between the reverse proxy and the license server.

   The maps are:
   https://myreverseproxyname:443/DSLS/client https://mylicenseserver:4085/DSLS/client
   https://myreverseproxyname:443/DSLS/admin https://mylicenseserver:4084/DSLS/admin

   where `myreverseproxyname` is the reverse proxy hostname and `mylicenseserver` is the license server hostname.

   ☞ **Note:** All of the following configuration examples reflect the configuration of an Apache 2.2 reverse proxy, purely for illustration purposes, and are in no way intended to reflect other reverse proxy configurations.

   Uncomment the following lines in the reverse proxy configuration file (`httpd.conf`):

   ```
   #LoadModule proxy_module modules/mod_proxy.so
   #LoadModule proxy_http_module modules/mod_proxy_http.so
   #LoadModule ssl_module modules/mod_ssl.so
   #Include conf/extra/httpd-ssl.conf
   #Include conf/extra/httpd-default.conf
   ```

   then edit the `httpd-default.conf` file and reset the value of the `KeepAliveTimeout` parameter:

   ```
   KeepAliveTimeout 5
   ```

   to a more appropriate value, for example:

   ```
   KeepAliveTimeout 60
   ```

Add the following lines in the SSL configuration file for the reverse proxy (`httpd-ssl.conf`), before the `</VirtualHost>` tag:

```
SSLProxyEngine on
ProxyPass /DSLS/client        https://mylicenseserver:4085/DSLS/client
ProxyPassReverse /DSLS/client https://mylicenseserver:4085/DSLS/client

ProxyPass /DSLS/admin         https://mylicenseserver:4084/DSLS/admin
ProxyPassReverse /DSLS/admin  https://mylicenseserver:4084/DSLS/admin
```

where `mylicenseserver` is the name of your license server.

Install your own certificate or a self-signed certificate you can generate by following the instructions on this site:

```
http://httpd.apache.org/docs/2.0/ssl/ssl_faq.html#selfcert
```

This certificate will be presented by the reverse proxy to the license client and the **License Administration Tool**.

2. Configure all licensing client computers to point to the reverse proxy.

   To do so, add the following declaration to the `DSLicSrv.txt` file on each licensing client:

   ```
   myreverseproxyname:443
   ```

   where `myreverseproxyname` is the reverse proxy name and `443` is the proxy port number (443 by default).

3. If you also want the **License Administration Tool** to be able to cross the reverse proxy, configure the **License Administration Tool** to point to the reverse proxy.

   To do so, start the **License Administration Tool**, and select the `Servers - New` command. When the **License Server Connection Parameters** dialog box appears:
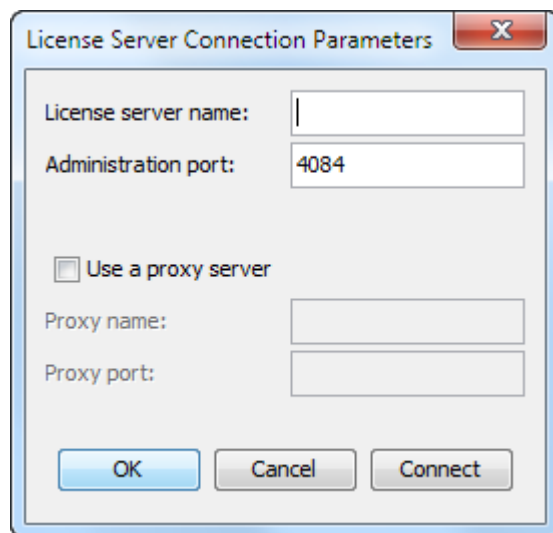
   specify the reverse proxy hostname (`reverldsy` in our example) in the **License server name** field (instead of the license server name), and set the SSL port number (443 by default) in the **Administration port** field, for example like this:
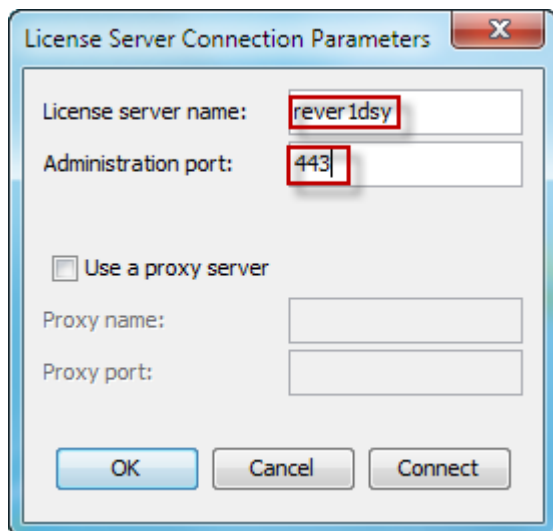
Only check the `Use a proxy server` option if you are also using a forward proxy.

☞ **Note:** If you are using a failover cluster, you need to set up three ports on the reverse proxy, corresponding to the three license servers. For example, the `DSLicSrv.txt` file on each licensing client may contain in this case:

```
myreverseproxy:443, myreverseproxy:444, myreverseproxy:445
```

Once the reverse proxy has been implemented, there are two different names for the servers displayed in the **License Administration** and **License Recycle** tabs and in the detailed view in the **License Usage** tab. The name of the reverse proxy is displayed at the top, and the real license server name is displayed below, for example:
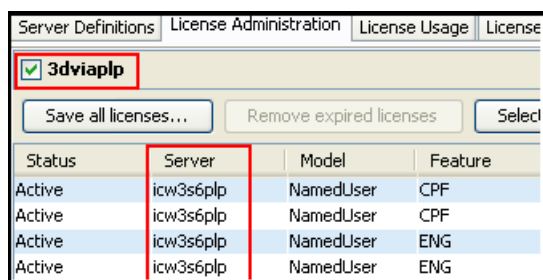
The licensing clients and the **License Administration Tool** can now communicate with a license server located behind a reverse proxy.

Managing Licenses

This section explains how to manage licenses.

Enrolling Licenses

Once your license server has been configured and activated, you can enroll your licenses.

1. Select `Start - All Programs - DS License Server - License Server Administration` to launch the **License Administration Tool** if it is not already launched:
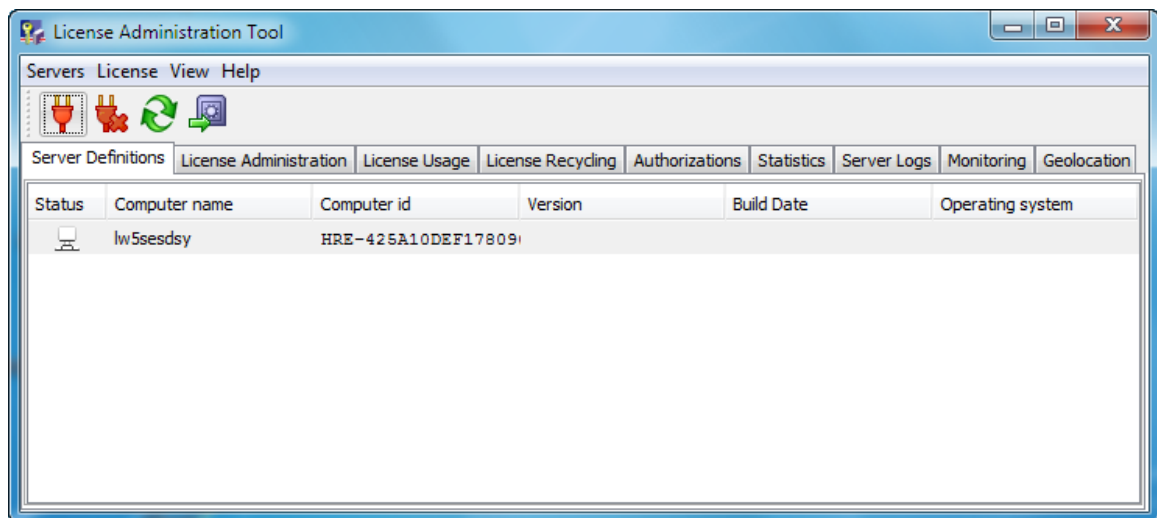
2. Connect to the server.

   To connect to the server:

   - Select the `Servers - Connect` command and select the server name from the list.

   - Or, point to the ⬚ icon, right click and select the `Connect` command.

   - Or, you can also click the ⬚ icon to connect all servers at the same time.

   The ⬚ icon confirms that your server is operational:
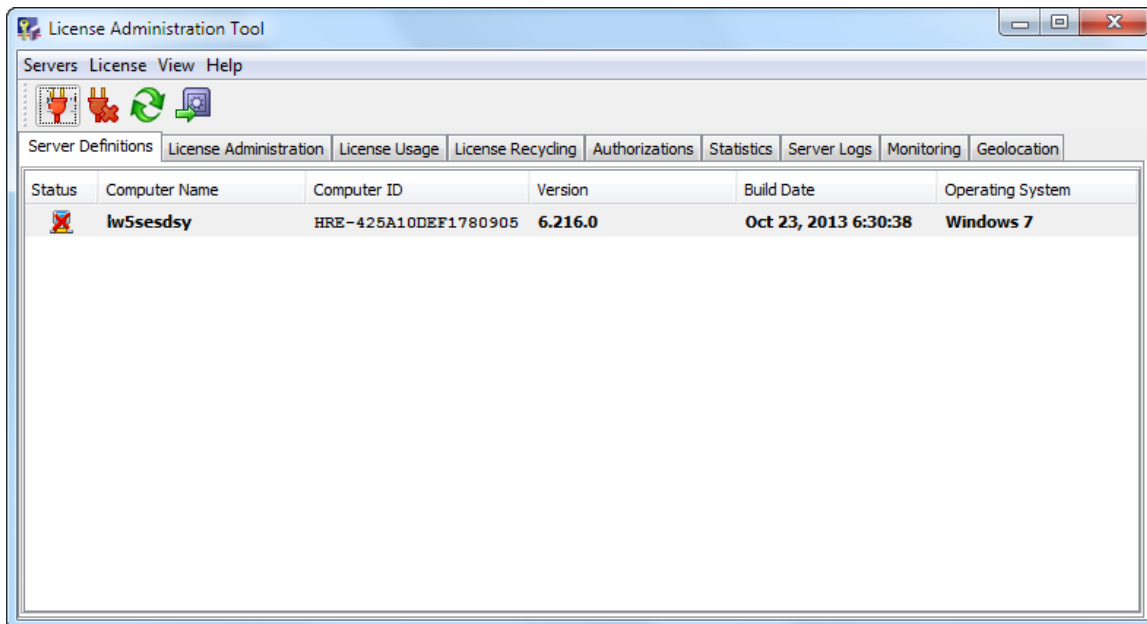
3. Enroll your licenses as follows:

a. Select the `License - Enroll` command or click the icon.

The **Open** dialog box is displayed.

b. Go to the directory containing your licenses and select the appropriate licenses, then click the **Open** button.

Note that you may receive either individual license keys (which are in files with the obsolete `.LIC` extension), or license keys grouped in a single file (which has the `.LICZ` extension). With a `.LICZ` group of license keys, you enroll all the licenses at the same time.

A `.LICZ` file will be named something like this (with the `.LICZ` suffix):

`DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ`

The **License Enrollment** dialog box opens, informing you that license enrollment has been started, followed by confirmation that your licenses have been successfully enrolled on your server:

```
License enroll starting
lw5sesdsy: License enroll starting
Sending files to server lw5sesdsy

E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-1-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-2-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-3-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-4-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-5-of-9.LIC
```

```
E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-6-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-7-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-8-of-9.LIC


E:\Licenses\DLD-430814856494DBA7_7KLXM-UVSBG-8VFDL-GPMGS-V1ED3_0001_1.LICZ/FEAT-9-of-9.LIC


lw5sesdsy : 9 licenses received
```

4. Click **OK** to return to the **License Administration Tool**.

The 🖥 icon confirms that your server has been activated:
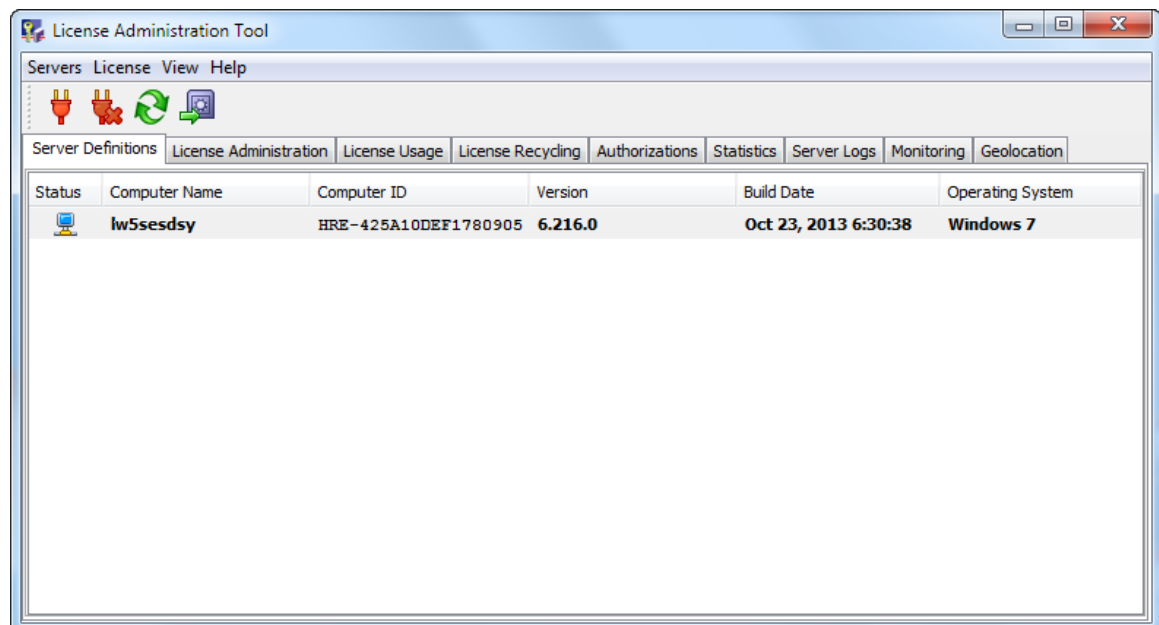
If you point to the 🖥 icon, a tooltip like this will be displayed:
server lw5sesdsy (10.232.69.69) connected
confirming that your license server is up and running.

👉 **Note:** Once you have configured and activated your server as a standalone server, you can no longer change your mind and configure it as part of a failover cluster. This is why the corresponding options are grayed out.

Administering Licenses

You can perform simple license administration tasks on licenses after enrolling them.

1. Click the **License Administration** tab:
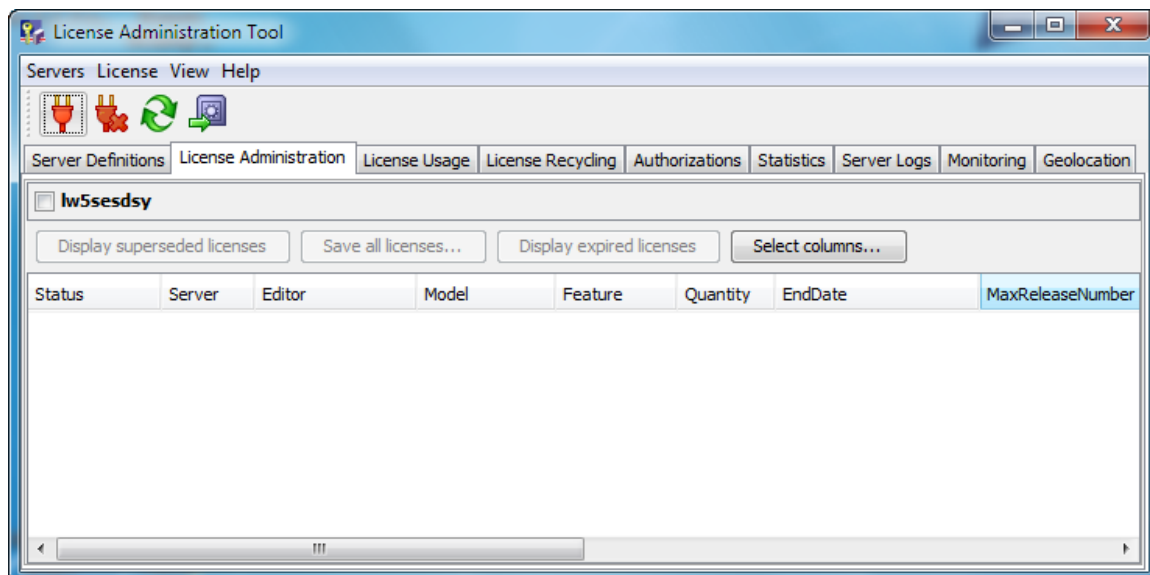
2. Check the check box next to the desired server name (there may be several server names) to view the licenses enrolled on that server.

   The licenses you enrolled are listed:
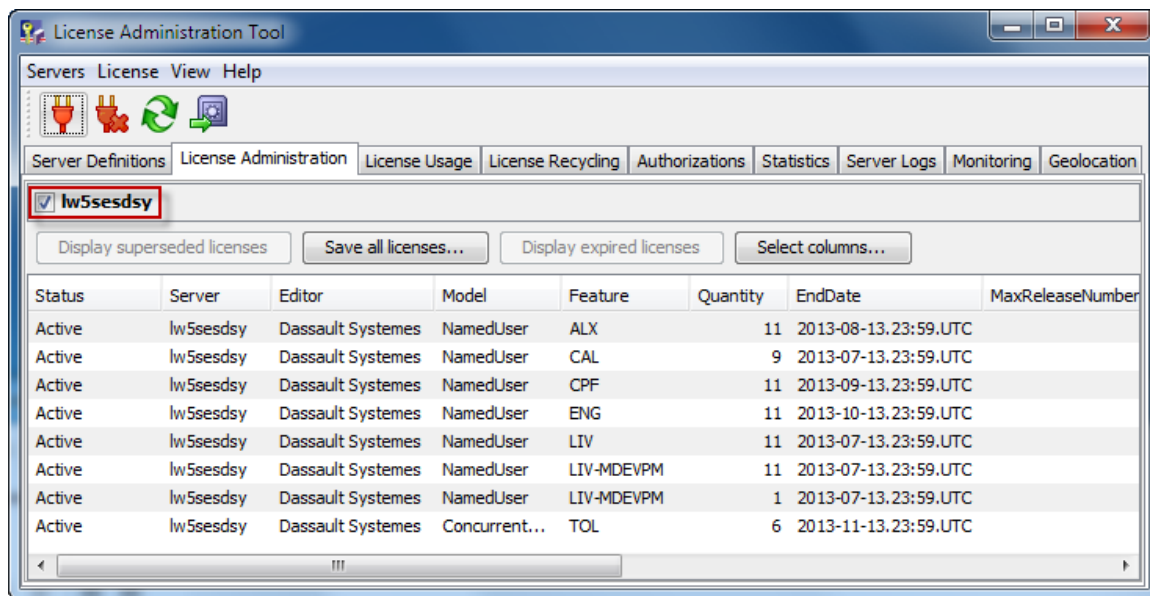
   A tool tip is displayed on the vertical scrollbar to display the total number of lines and the range of lines displayed.

   Time values displayed in UTC.

3. Right-click a license and select the **Save** command to save a single license. If the license belongs to a replacement group, all lines corresponding to this group are automatically selected, and all lines selected will be saved as a whole.

☞ **Note:** Note that in the vast majority of cases, your licenses will be shipped as license groups.

4. Right-click a license and select the **Delete** command to delete the license. If the license belongs to a replacement group, all lines corresponding to this group are automatically selected, and all lines selected will be deleted as a whole.

5. Click the **Display superseded licenses** button if you wish to list licenses belonging to a replacement group which is not the highest. Click again to revert back to the default (**Hide superseded licenses**).

This button is grayed out if no superseded licenses exist.

6. Click the **Save all licenses...** button to save all licenses to a separate directory of your choice.

7. The next button to the right displays one of three choices, depending on the context:

- if any licenses have expired, and can be removed, the **Remove expired licenses** button will be displayed. Click this button to remove any licenses from the list which have expired. This option is grayed out in read-only mode (when another **License Administration Tool** is connected).

- click the **Hide expired licenses** button to hide from the GUI the expired licenses belonging to a replacement group containing non-expired licenses and which cannot be removed. Expired licenses belonging to a replacement group can be removed only if all licenses in this group have expired, since a replacement group can only be removed as a whole.

- click the **Display expired licenses** button to display the expired licenses belonging to replacement groups also containing non-expired licenses.

When the button remains grayed out, no licenses have expired.

8. Click the **Select columns...** button to choose which columns to display in the tab.

The **Select Columns** dialog box is displayed:
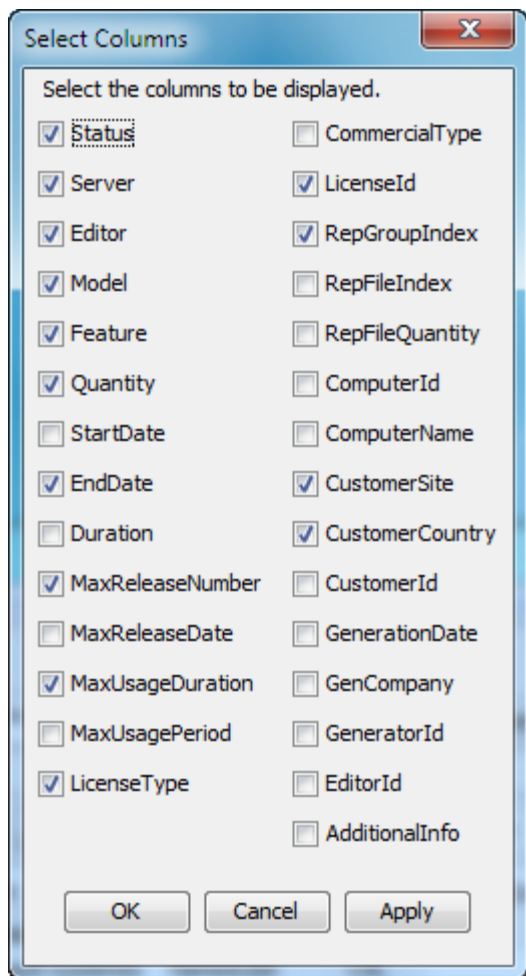
The columns you can display are:

Status The license status can be:

- `Active`: the license has been enrolled and is valid
- `Expired`: the license validity date has expired. The line appears in red.
- `Not yet available`: the license has been enrolled, but its validity date has not yet been reached. The line appears in blue.
- `Invalid`: replacement group has been partially enrolled. You have to remove it and re-enroll it properly. The line appears in red.
- `Superseded`: the license is no longer available, because a replacement group with the same `LicenseId` and a higher `RegGroupIndex` has been enrolled. `Expired` and `Not yet available` status are not valued for Superseded licenses. If desired, superseded licenses can be safely deleted by right-clicking on them. By default, line is not displayed.

Server Name of the license server.

Editor The editor can be, for example:

- Dassault Systemes
- Dassault Systemes V5

- Dassault Systemes V4.

Model   Licensing model with which the license complies:

- NamedUser
- ConcurrentUser
- Token.

Feature   Feature name, such as product trigram or custom configuration.

Quantity   Number of licenses enrolled.

StartDate   Date from which the license is valid.

EndDate   Date after which the license is no longer valid.

Duration   License validity duration (in hours).

MaxReleaseNumber   Feature release level authorized by the license. Only licensing clients having a release level lower or equal to this number are allowed. The `MaxReleaseNumber` can be equal to 0. In this case, the license server does not perform any check related to release number: the license can be granted whatever the release level of the licensing client.

MaxReleaseDate   Client release date authorized by the license. Only licensing clients having a release date lower or equal to this number are allowed.

MaxUsageDuration   Displays one of two values:

- the value is "0" for a full named user license
- the value is "40" for a casual usage named user license. The value corresponds to the number of hours the license can be used by a given named user during a given month.

For example, the license highlighted below is a casual named user license:
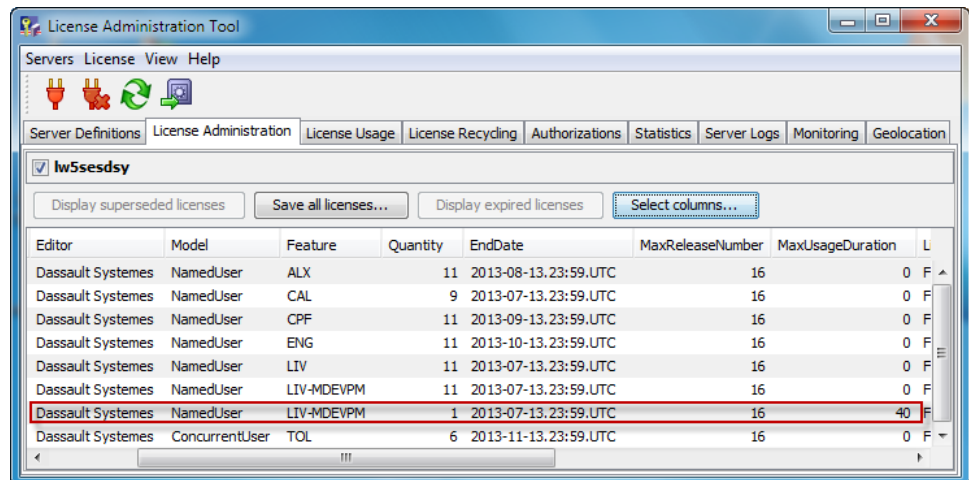
MaxUsagePeriod   Displays one of two values:

- the value is "0" for a full named user license
- the value is "1" for a casual usage named user license.

LicenseType	Type of license enrolled on the license server, depending on how your license server is configured:

- Floating (for standalone license servers)
- Failover (for failover clusters).

CommercialType	Commercial types are:

- STD (for standard commercial licenses)
- DEMO (for demonstration licenses)
- EDU (for educational licenses).

LicenseId	This character string is the license identifier. A license id can exist either for a single feature or a group of features.
RepGroupIndex	License replacement group index. For a given `LicenseId`, the highest number is active and the other numbers are superseded (if they have not been removed).
RepFileIndex	Number of a particular feature in the replacement group.
RepFileQuantity	Number of individual features included in the replacement group.
ComputerId	Computer id of the machine hosting the license server.
ComputerName	Name of the computer hosting the license server (when available).
CustomerSite	License owner.
CustomerCountry	Country of license owner (3-letter international code).
CustomerId	License owner id.
GenerationDate	Date on which the license was generated.
GenCompany	Company which generated the license.
GeneratorId	Id of the company which generated the license.
EditorId	Editor id.
AdditionalInfo	For future use.

What are License Replacement Groups?

The `RepGroupIndex` column displays the *license replacement group* index.

A given license id can exist either for a single feature or a group of features.

When you enroll the feature licenses for a given license id and for the first time, the number in the `RepGroupIndex` column is set to "0", and the Status is Active. When your licensing needs evolve, you may need to replace an existing feature or group of features referenced by the same license id. This is referred to as a *license replacement group*. When you enroll the new license replacement group for the same license id:

- the Status of the previous license changes to Superseded and is no longer displayed. If you wish to display superseded replacement groups, click on the **Display superseded licenses** button. In order to gain useful space, after a given period of validation, we recommend that you remove superseded licenses.
- a new line containing the same license id is added, the number in the `RepGroupIndex` column is incremented, and the Status of the license is Active.

Getting Information About License Usage

The **License Usage** tab allows you to monitor license usage.

1. Select `Start - (All) Programs - DS License Server - License Server Administration` to launch the **License Administration Tool** if it is not already launched.
2. Connect to the server.
3. Click the **License Usage** tab.

   Based on the licenses previously enrolled, the **License Usage** tab looks like this:

You can sort columns by clicking on the column headers. If you want to sub-sort several columns, press the `Ctrl` key while clicking.

A tool tip is displayed on the vertical scrollbar to display the total number of lines and the range of lines displayed.

|	
Editor	Dassault Systemes, for example.
Feature	Trigram of the product or custom configuration license. Keep in mind that the license can be a named user license, a concurrent user license or a token license.
In use	The number of licenses currently being used for a particular feature.
Count	Total number of licenses enrolled for a particular feature.

4. Start a process (from the client or elsewhere) requiring a CPF license.

   For example, log onto your Live Collaboration server using one of the users created at Live Collaboration server installation, for example PLMADM, the administration user.

   When the license server grants a CPF license, for example, to a license client, the **License Usage** tab looks like this:
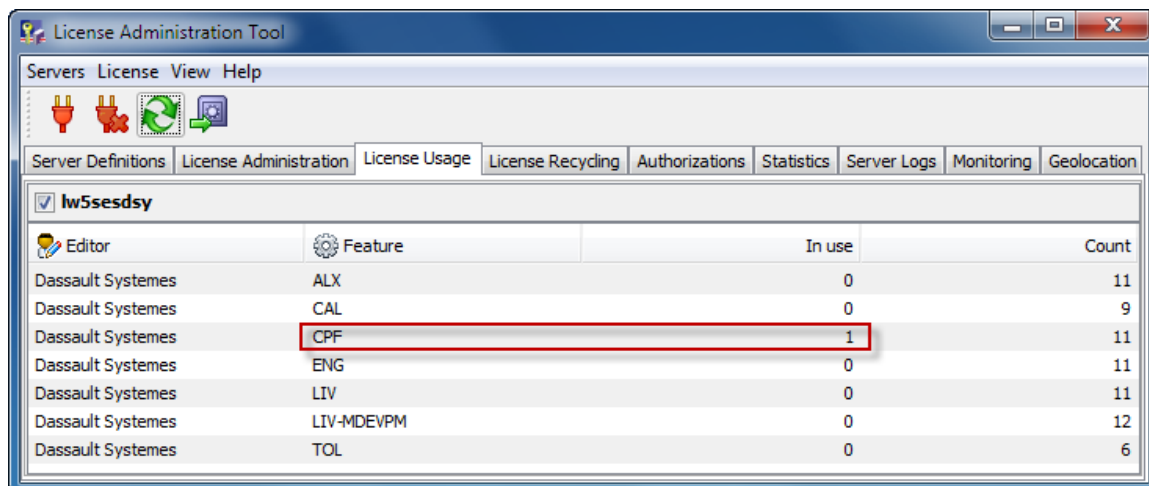
The number in the **In use** column for the CPF license is incremented by 1. Each time a license is consumed, the number is incremented.

5. To find out details about the license (who is using the license, what type of license it is, etc.), double-click the line containing the CPF license (which is a named user license).

The **Detailed License Usage** box appears:

Time values displayed are formatted according to the local time (time zone) of the computer on which the **License Administration Tool** is running.
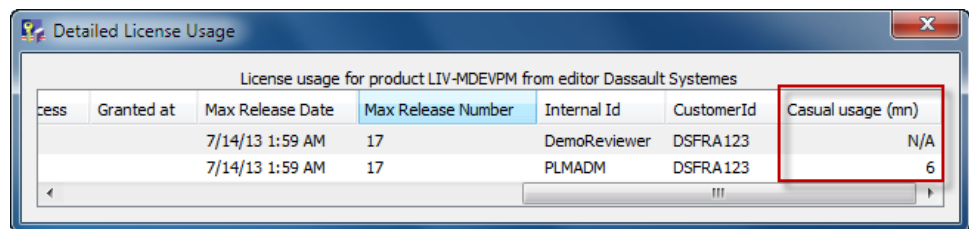
Server	Name of license server computer.
License type	Type of license: NamedUser or Concurrent.
User	Named user or concurrent user to whom the license is granted.
Host	Name of the client computer on which the licensed process is running.
Granted since	Time and date at which the license was originally granted to the user.
Last used at	Time and date at which the license was last used.
Active process	Name of the active client process to which the license is granted. The prefix `Offline` is used to identify extracted offline licenses. Note that in the case of an application server process, the process name may not be displayed permanently. Set the following variable: `MX_NUL_FULL_USAGE_REPORT=true` in the `enovia.ini` file (Windows) or `mxEnv.sh` (UNIX) to ensure that the process name is displayed. For more information about this variable, see the Live Collaboration server documentation.

Granted at	Time and date at which the license was granted to the current process(es).
MaxReleaseNumber	Feature release level authorized by the license. Only licensing clients having a release level lower or equal to this number are allowed. The `MaxReleaseNumber` can be equal to 0. In this case, the license server does not perform any check related to release number: the license can be granted whatever the release level of the licensing client.
MaxReleaseDate	Client release date authorized by the license. Only licensing clients having a release date lower or equal to this number are allowed.
Internal Id	Reserved for internal use.
Customer Id	Customer id.
Casual usage (mn)	This field is only displayed once a casual license has been granted. It indicates, for the current month, the cumulative casual usage for a given casual license, measured by the license server in minutes, as illustrated:

N/A is displayed in the field for full named user licenses, indicating that this field is not applicable to full named user licenses. The value in minutes is highlighted in red if the maximum allowed usage duration is exceeded.

Role of the License Server

When the license server receives a named user license request, it checks if it is for a full license or a casual license. In the case of casual license, the license server then:

- measures the monthly usage of casual usage named user licenses by named users
- compares the monthly usages with maximum usage duration
- generates monthly reports pointing the over-use (if any).

The license server measures usage only for casual usage named user licenses. It does not measure usage of full named user licenses, concurrent user licenses or token licenses.

In the event of license over-use, the following message is displayed in the casual usage log file:

Usage of XXX (Dassault Systèmes) by YYY in excess of ZZZ mn

and also in the **Server Logs** tab.

☞ **Note:** The month is managed as a calendar month between the 1st of month 00:00 UTC and the last day of month 24:00 UTC. The usage measurement is the same if the calendar month comprises 28, 29, 30 or 31 days or if it contains holidays.

Monthly Usage Reporting

At the beginning of every calendar month, the license server generates a usage report. This monthly report file is generated only if at least one active casual usage named user

license is enrolled in the license server. It is generated even if no over-use occurred during the calendar month.

All casual usage values in **Detailed License Usage** dialog boxes on the license server are reset to "0" the following month.

The report is generated at 00h00 UTC. If the license server is not running at this particular moment, the report is generated the next time the license server is restarted.

In case of failover, each member generates the same report. The report files on each of the three members are the same.
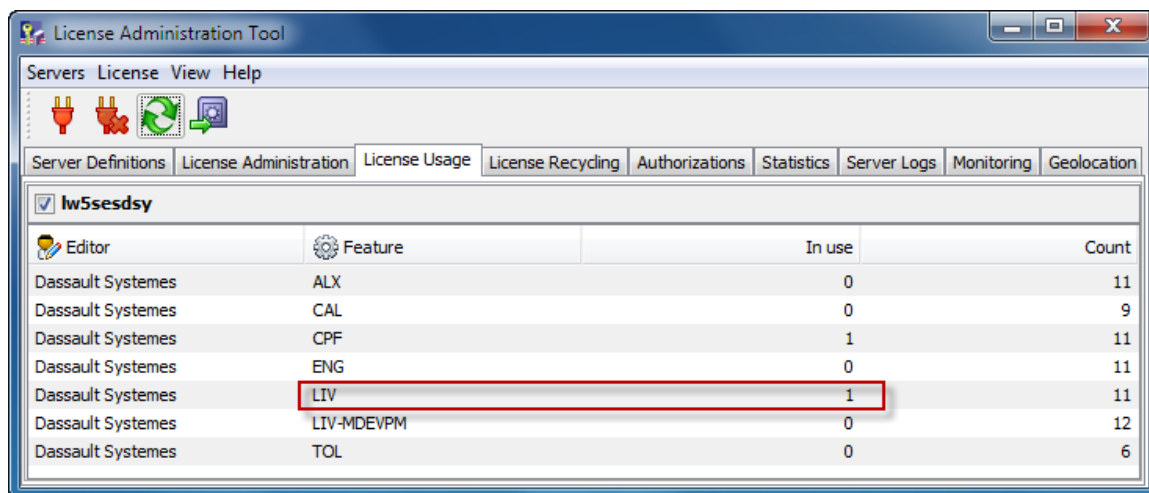
Please refer to *File Locations, Settings and Registry Entries* for a description of the report's location and contents.

☞ **Note:** You will be expected to provide a casual license usage report on request.

6. This time, start the LIV application and connect to a data source different from a Live Collaboration server (you are not connected to this server), for example by opening a 3DXML file.

You will be prompted to choose a LIV license using the **License Manager** tab.

The **License Administration Tool** box now looks like this:
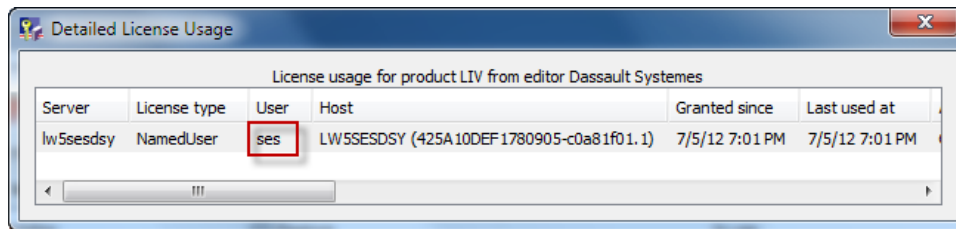
A license for LIV is consumed, so the number in the **In use** column is incremented by 1.

7. To find out details about the license (who is using the license, what type license it is, etc.) double-click the line containing the LIV license.
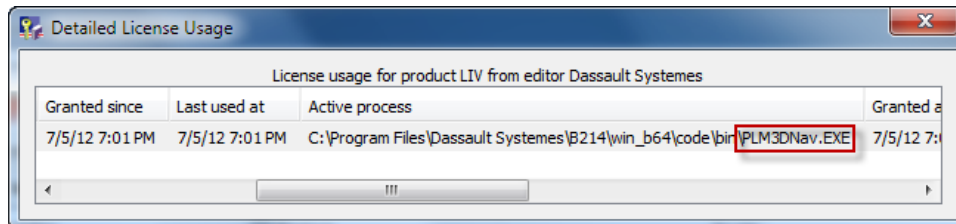
The **Detailed License Usage** box appears and looks like this (divided into three parts in the following screenshots):

This is the left section showing the user:

and this section shows the active process:
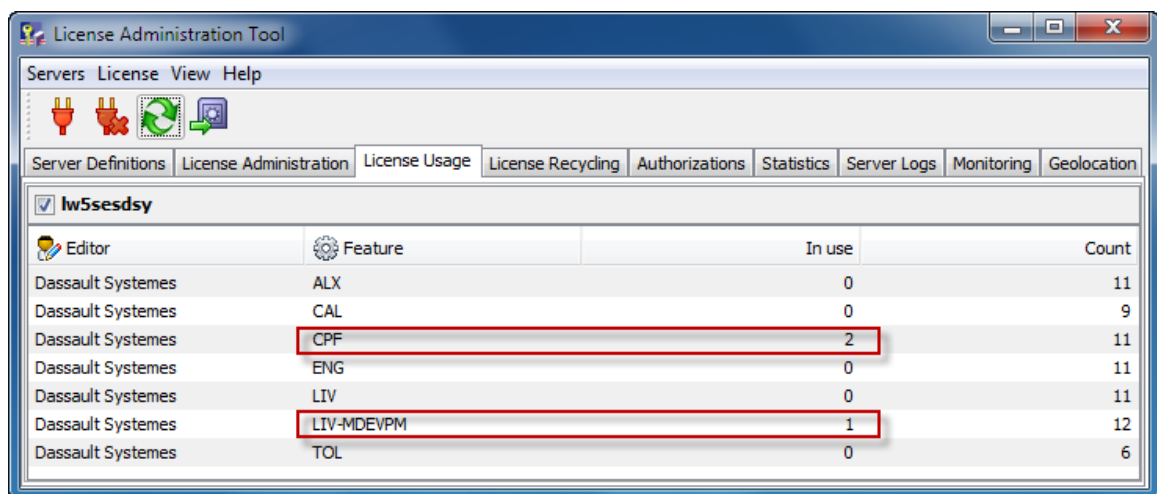
You will find the same type of information (the license type is NamedUser), except that the user is not a named user (because you are not connected to the Live Collaboration Server) but the operating system user. When you exit the session, therefore releasing the license, the number in the **In use** column becomes "0".

8. Then, start the LIV-MDEVPM configuration and log on as DemoReviewer (this time, you are connected to the Live Collaboration server as a named user).

The **License Administration Tool** box now looks like this:

The LIV-MDEVPM license is a named user license. The number of LIV-MDEVPM licenses in use is now "1", and the number of CPF licenses in use is now "2" because when DemoReviewer consumes a LIV-MDEVPM license, a CPF license is also consumed.

☞ **Note:** It may occur for a given feature that the numbers in the **In use** and the **Count** columns are identical. This means that no more license are available. When this is the case, the corresponding line is highlighted in bold.

9. Double-click the line containing the LIV-MDEVPM license.

The **Detailed License Usage** box appears and looks like this:
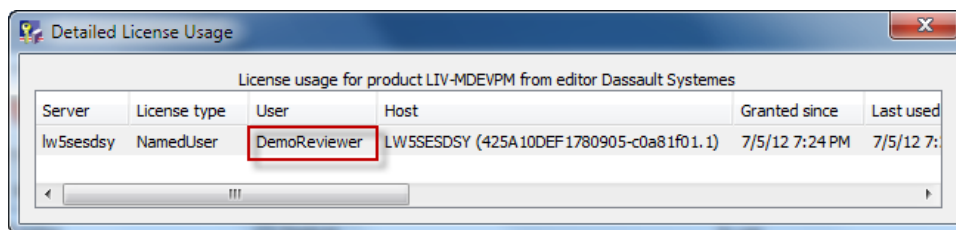
Recycling Named User Licenses

This section describes how named user licenses are consumed and the steps you must take to recycle them when you need to reassign them to other users.

If you do not have any named user licenses, you may want to hide this tab by going to the **View** menu and unchecking `License Recycling`.

Named user licenses are consumed immediately when a user starts a session, remain consumed after the user logs out, and continue to be consumed until the license expiration date.

The need occasionally arises, under exceptional circumstances (for example, when employees leave the company), to unassign licenses to sever the tie between these employees and licenses assigned to them, and reassign the licenses to another user.

When a named user license is recycled, the license server removes the link between a given named user license and a given named user. After recycling, the named user license is no longer tied to a specific user but is available for any user (including the previous user).

The Live Collaboration Server-side **Assign Licensing by Product** tool (discussed in the *Dassault Systemes Licensing Essentials Guide*) is used to assign licenses to and unassign licenses from users, but this may not be sufficient in some cases (if the Live Collaboration server cannot contact the license server, for example).

The licenses can also be recycled on the license server. This is the role of the **License Recycling** tab which allows you to recycle named user licenses only.

1. Select the **License Recycling** tab.

In this example, several named user licenses have been granted:
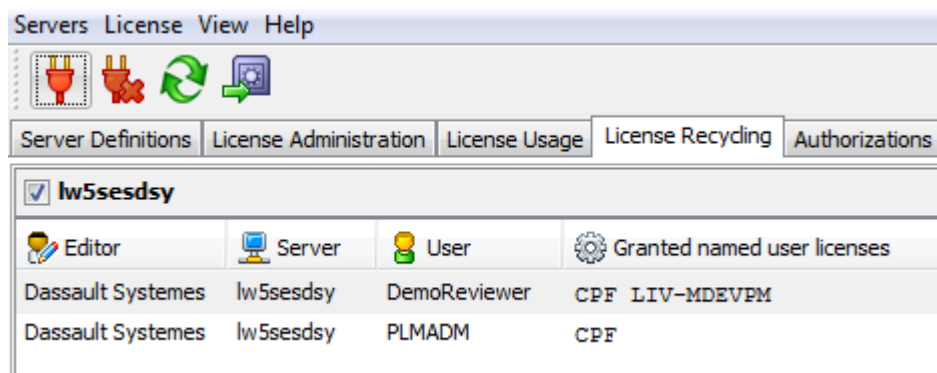
A tool tip is displayed on the vertical scrollbar to display the total number of lines and the range of lines displayed.

☞ **Note:** Since they cannot be manually recycled, casual usage named user licenses do not appear. At the beginning of every month, the license server automatically recycles all casual usage named user licenses. If a casual usage named user license is in use at that moment, recycling of that license is postponed by the license server until it is no longer in use. If the license is used again during the postponement period (which can occur if the user starts another session before having closed all the sessions from the previous month), license recycling is cancelled for this month for this user.

2. To recycle a license, double-click the line containing the license for user `DemoReviewer`, or right-click the line and select the `recycle licenses` command.

   You are prompted to confirm:
   Do you really want to recycle named user licenses granted to DemoReviewer on server lw5sesdsy?

   Click **Yes** or **No**. If you click **Yes**, another dialog box informs you that all the licenses for the selected user on the selected server will be recycled.

   ☞ **Note:** It is not possible to recycle simultaneously licences for several users.

3. Click **OK**.

   The license may or may not be recycled. If it cannot be recycled, another dialog box appears with a message like this:
   Licenses granted to DemoReviewer on server lw5sesdsy were not recycled: CPF is locked until 8/4/13 7:24 PM LIV-MDEVPM is locked until 8/4/13 7:24 PM

   If you did not close your session, you will be informed that the license is locked by a running process.

4. Click **OK** to exit.

   ☞ **Note:** You can configure your license server to automatically recycle named user licenses which have not been used for at least 30 days. For more information, refer to the *Enable Automatic Recycling* option.

Setting License Authorization Rules

This section describes how to set up license authorization rules for concurrent user licenses, token licenses and named user licenses for users or machines.

Concurrent user licenses can be shared among users and are not tied to specific users. Certain licences can be sold as shareable, which can be granted and released, for example, during a session using the **Shareable Products** tab. Shareable licenses comply with the Concurrent User Licensing model and are network licenses served by the DS License Server. By default, concurrent user licenses can be used without prior authorization by the DS License Server.

Token licenses are similar to concurrent user licenses. The main differences are that a token cannot be shared by several client processes (even running on the same computer), and that several tokens can be granted to a given client process.

Named user licenses are typically granted to users managed by the Live Collaboration Server-side `Configure My ENOVIA` command, or by the `Assign Licensing by Product` command. However, in certain cases,

you may need to enforce an additional stricter level of license control of named user licenses on the DS License Server. To do so, you can optionally set authorization rules for named user licenses.

☞ **Note:** A license authorization rule for a specific named user license takes precedence over license assignments made on the Live Collaboration Server. This mechanism is particularly useful when you have several Live Collaboration Servers and a single DS License Server. In this case, for example, the number of potential named users declared on the Live Collaboration Servers (and to whom licenses are assigned) may exceed the number of licenses available. Centralizing named user license rules on the single DS License Server will enable you to enforce exactly the number of licenses granted to your company.

However, when managing authorization rules for a pre-V6R2012x license server, a **License Administration Tool** cannot manage named user licenses. When upgrading the DS License Server, existing authorization rules are automatically set to the concurrent user model.

The role of the **Authorizations** tab is to set authorization rules for concurrent user licenses, named user licenses and token licenses. There are four types of rules:

- Allow: authorize users or groups of users, specific computers or groups of computers, IP ranges and IP range groups to use licenses
- Deny: deny authorization
- Reserve: reserve a given quantity of licenses for a list of users, computers or IP ranges
- Limit: limit a list of users, computers or IP ranges to a given quantity of licenses.

Only one rule type can be applied to a given license.

1. Select the **Authorizations** tab.

   The license servers available are listed to the left (highlighted in red). The list to the right contains the enrolled licenses classified first by editor, then by license model (Concurrent User, Token, Named User), followed by license feature then license id.

   Our example illustrates separate sections for both concurrent and named user licenses you can authorize or deny for the selected license server. For example, the concurrent licenses enrolled on the server for TOL for the editor `Dassault Systemes` are visible, along with a number of named user licenses:
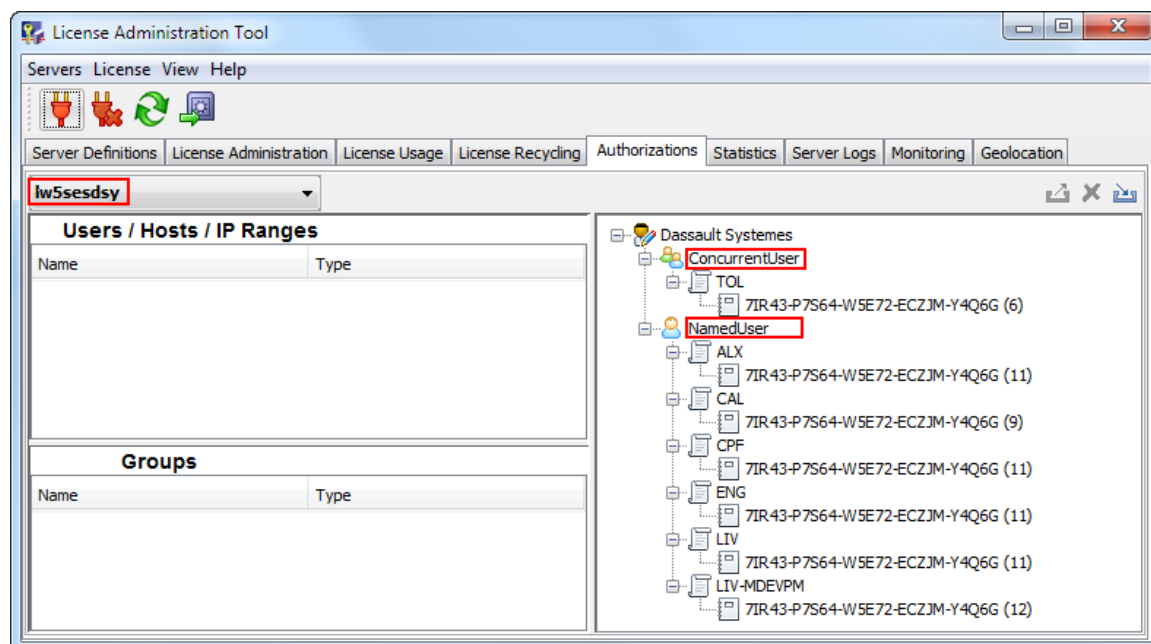
2. Right-click in the space below `Users/Hosts/IP Ranges` and select the `Add` command to create a User, Host or IP Range.

The **New User/Host/IP Range** dialog box appears:
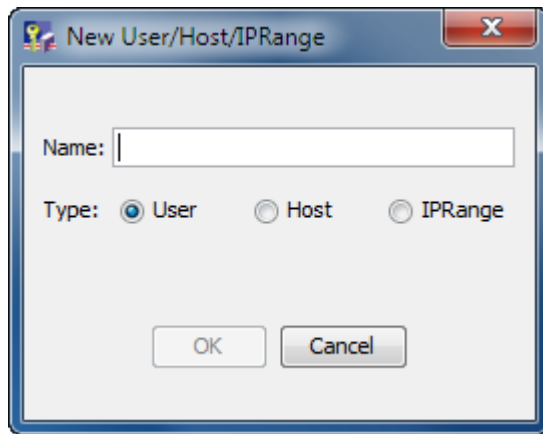
☞ **Note:** When the licensing client you are using is connected to the Live Collaboration Server, the user name is the P&O login name. When the client is not connected, the user name is the operating system login name.

3. Enter the name and check the appropriate option for what you are creating: user or host name, then click **OK**.

User or Host Enter the user name or host name.

User and host names are case-insensitive, whatever the input method (by the GUI, command line mode or XML file). For example, "Bob" and "BOB" are considered to be the same user. When entering user names and host names, all characters are converted to lowercase.

If upgrading from an existing DS License Server, user names and host names are migrated to lowercase. Whenever migration leads to a collision (for example, "BOB" and "Bob" are both migrated to "bob"), only one set of rules is kept, randomly. Behavior was unpredictable anyway.

Note that group names can still contain uppercase characters.

A host name cannot contain the "." character. For FQDN host names, the comparison is performed with the very first part of the hostname. Note that:

- you cannot enter a "." using the GUI
- a name truncated at the first "." in command line mode, when using an an XML file, or when migrating from a previous DS License Server level.

In our example, the `User/Host Definition` field contains two users (`administrator` and `demodesigner`):
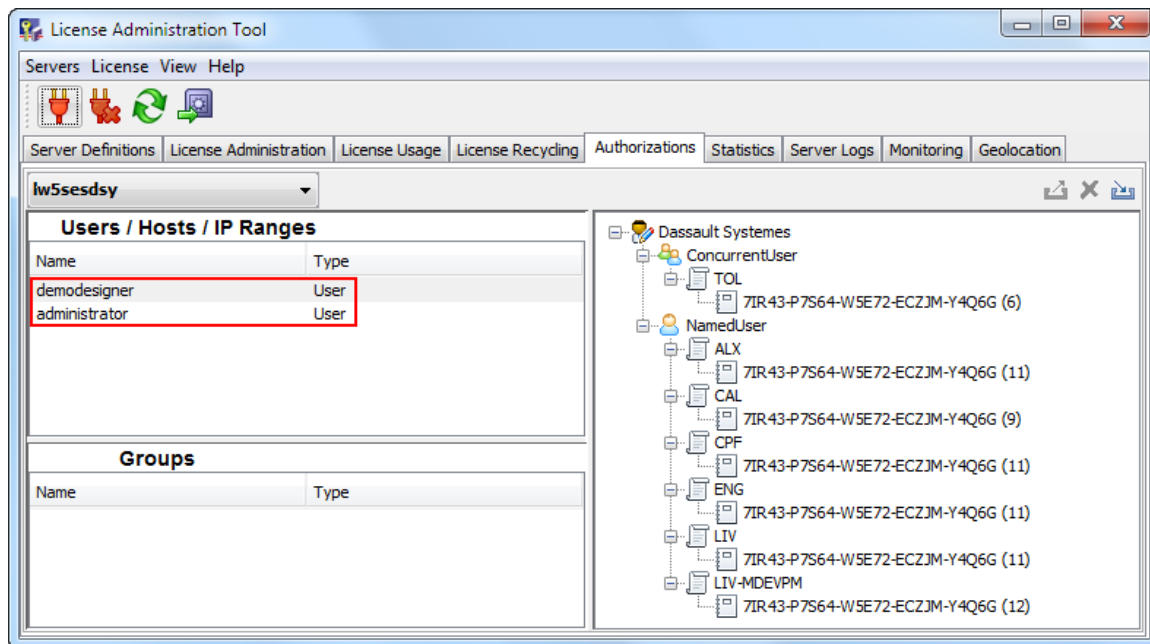
IP Range   Enter the IP range name. This is slightly different from the user/host names because for IP range the name and the value are different.

Then click the `IPRange` button to display the following:

Declare the IP ranges by clicking either the `Classless Inter-Domain Routing` button or the `IPv4 or IPv6 range:` button:

- Classless Inter-Domain Routing (CIDR)

    Example: `127.0.0.1/32` is an individual IPv4 address in CIDR notation

    `fd00::/10` is a range of IPv6 addresses in CIDR notation.

- IPv4 or IPv6 range (classful network)

    Example: `10.232.0.0-10.232.255.255` is a range of IPv4 addresses in classical notation.

4. Click on the symbol next to the TOL license. Do not select the individual license id if the imported license is a license group (which is nearly always the case). Then, right-click and select the `Add new rule - Allow` command.

Click **Yes** when asked to confirm.

The **Rule properties** dialog box appears:
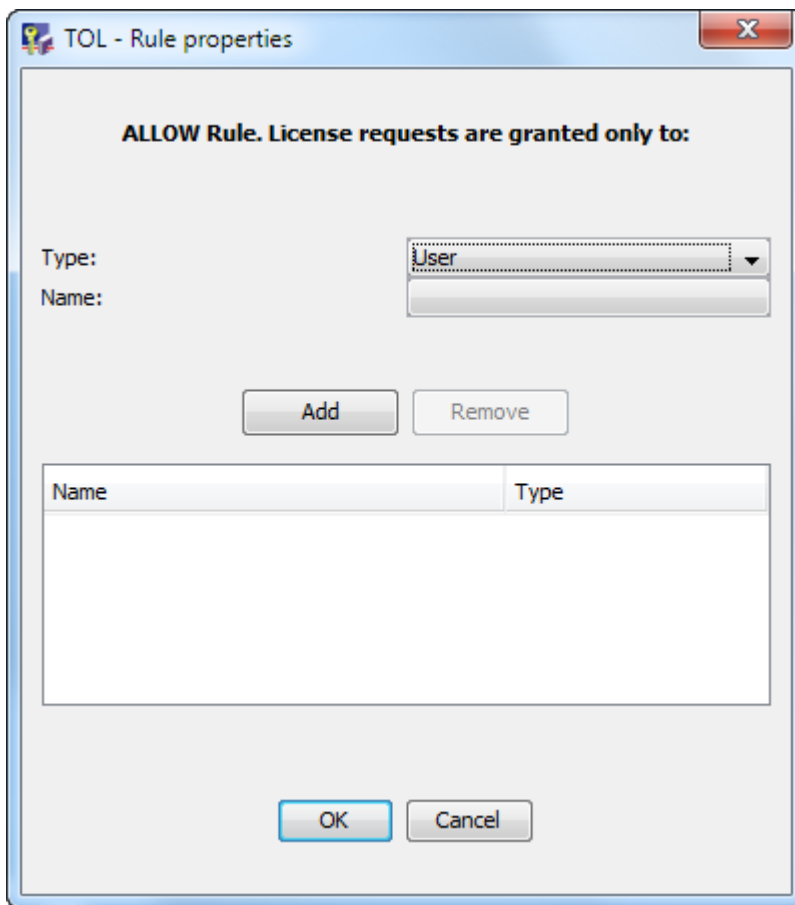
Select the type:	Select the type: User, Host, IPRange, User Group, Host Group, or IPRange Group.
Choose the name:	Click and choose the User, Host, IPRange, User Group, Host Group or IPRange Group name.

5. To authorize the user we created to use the TOL license, select the type, choose the name, click the **Add** button then click **OK**.

The **Authorizations** tab now looks like this:
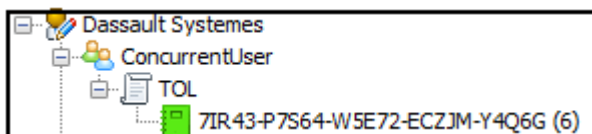
The TOL license is now highlighted in green, signifying that a rule has been created allowing the user to use the license.

If a user other than the authorized user attempts to log in, the following message is displayed:

No license available at this time for this product

Click **OK** and a second message appears confirming that the license is not authorized, for example:

DS License Server 3DEXPERIENCE R2014x Installation and Configuration Guide

Failed to request license for TOL version: 10 or higher) Error: License not authorized for this user License server configuration file path: C:\ProgramData\DassaultSystemes\Licenses\DSLicSrv.txt (default path) List of license servers: [01/01] lw5sesdsy:4085 OK: License server is running

6. To cancel the rule, click the TOL license and select the `Remove rule` command.

When prompted, confirm that you want to remove the rule by clicking **OK**. The TOL license is no longer highlighted in green.

You can multi-select several rules for deletion.

7. To deny authorization, click the TOL license and select the `Add new rule - Deny` command. Select the type, choose the name, click the **Add** button then click **OK**.

The **Authorizations** tab now looks like this:
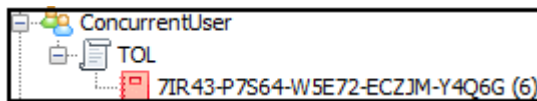
The TOL license is now highlighted in red, signifying that a "deny" rule has been created.

Click the user name and select the `Properties` command to display the user properties:
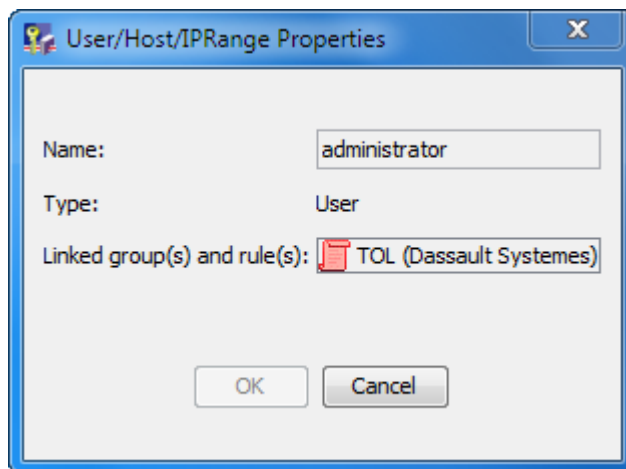
If the user then selects the `Shareable Products` tab in a client session and tries to reserve the license for TOL, a popup message appears:

No license available at this time for this product

Click OK and a second popup message appears confirming that the license is not authorized:

Failed to request license for TOL (version: 10 or higher) Error: License not authorized for this user License server configuration file path: C:\ProgramData\DassaultSystemes\Licenses\DSLicSrv.txt (default path) List of license servers: [01/01] lw5sesdsy:4085 OK: License server is running

If you click the **Server Logs** tab and scroll the log, you will see a message like this:

2013/07/07 18:04:40:402 W LICENSESERV TOL not granted, user administrator not authorized (from client LW5SESDSY (42721022FAFE292A-0ae84648.0):administrator:administrator:C:\Program Files\Dassault Systemes\B216\win_b64\code\bin\CNEXT.exe)

8. To create a group, right-click in the space below `Group definition` and select the `Add` command.

The **Create new group** dialog box appears:
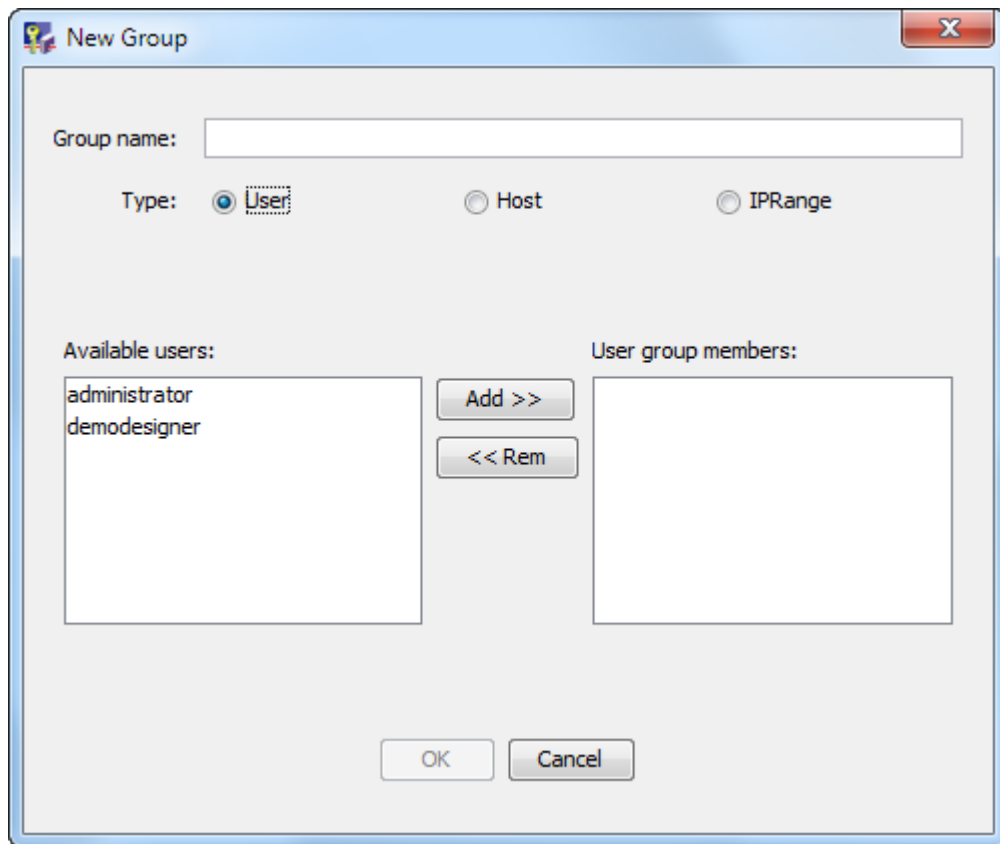
☞ **Note:** Note that operating system user groups are not supported.

a. Enter a name for the group.
b. Check the **User**, **Host** or **IPRange** option.
c. Select the user or host name or IP range, then click the **Add>>** button and click **OK**.

   The group is created. Click the group name and select the `Properties` command to display the group's properties:
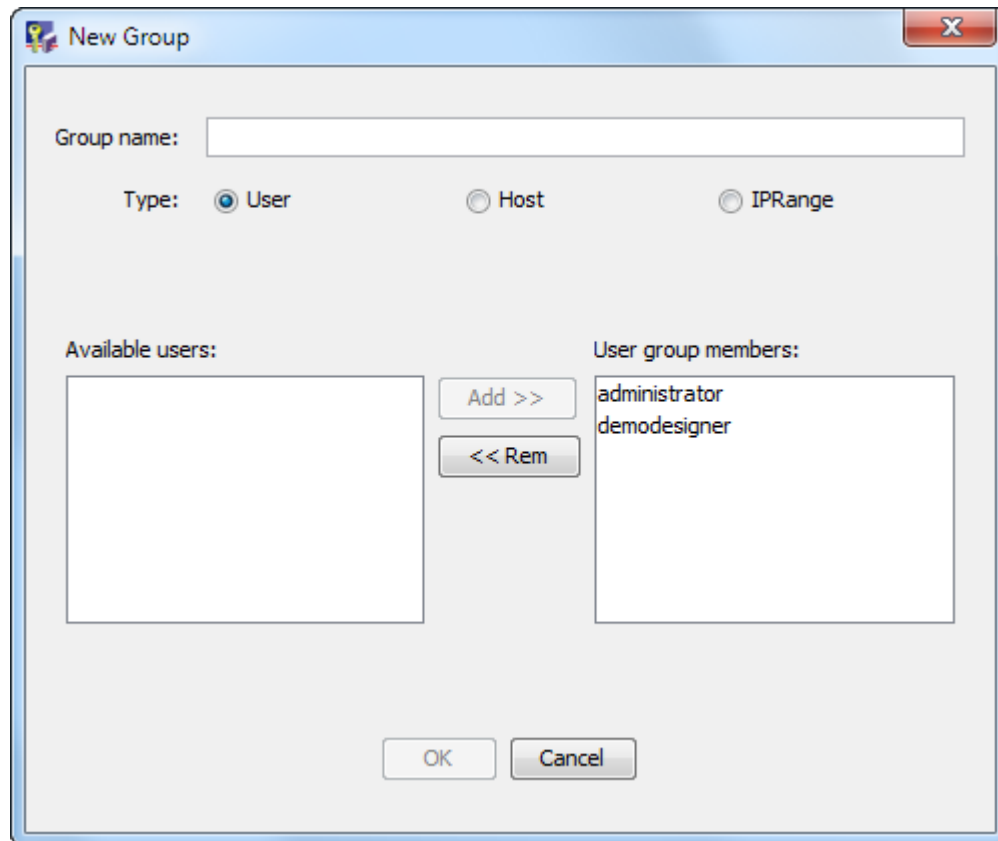
☞ **Note:** When you display the properties of a group, the `Group name` field can be modified.

9. You can also copy user, host and group definitions and rules to another license server by clicking the appropriate item and selecting the `Copy to server` command.

10. Click on a user, host, user group or host group and right-click to select the `Remove` command to delete the object.

   Contrary to V6R2014 and previous levels, you can delete a user, host, IPRange, user group, host group or IP range group even if it is referenced by a rule or belongs to a group. This behavior avoids modifying all rules tied to a user/host/group/IP range before deleting this user/host/group/IP range. When deleting the latter, the rules and groups which become empty (if any) are also deleted.

11. To reserve a quantity of licenses, click the TOL feature and right-click to select the `Add new rule -Reserve` command.

   The **Define a rule on the feature** dialog box appears:
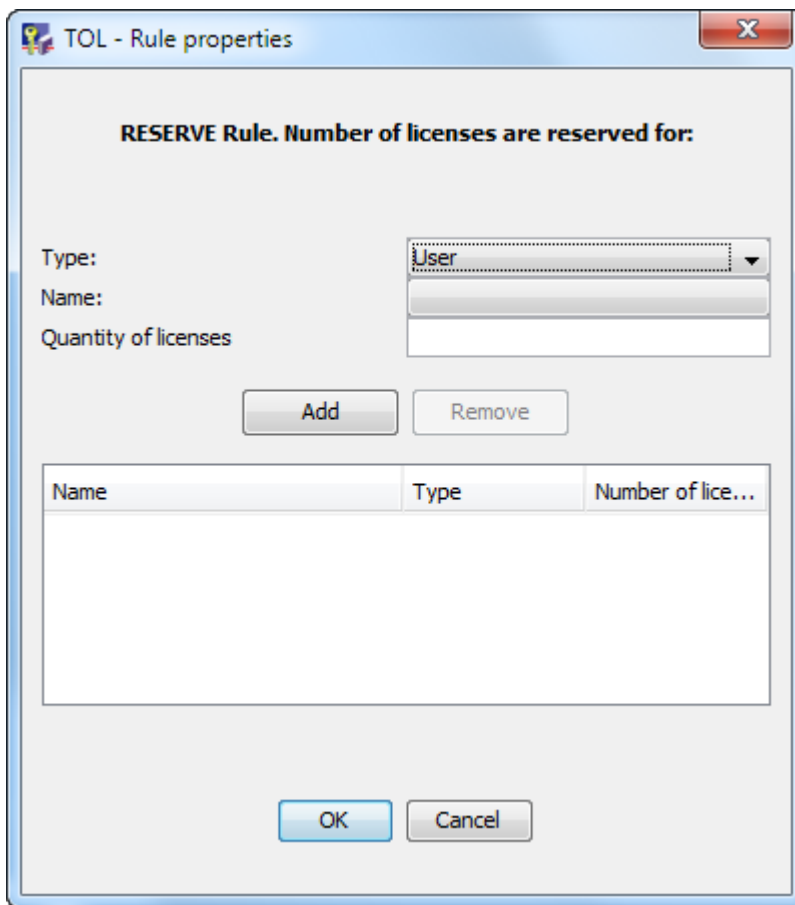
Select the type:	Select the type: User, Host, IPRange, User Group, Host Group, or IPRange Group.
Choose the name:	Click and choose the User, Host, IPRange, User Group, Host Group or IPRange Group name.
Quantity of licenses:	Specify the number of licenses to reserve.

Select the type, choose the name, specify the quantity of licenses then click the **Add** button then **OK**.

The **Authorizations** tab now looks like this:
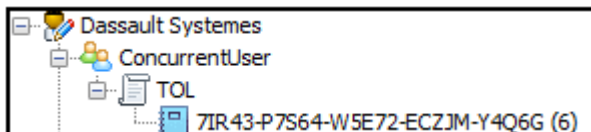
The TOL license is now highlighted in blue, signifying that a "reserve" rule has been created.

12. Right-click a license feature in the tree on the right to access the `Control offline` command.

Select the command to display the **Extract offline license configuration** dialog box:
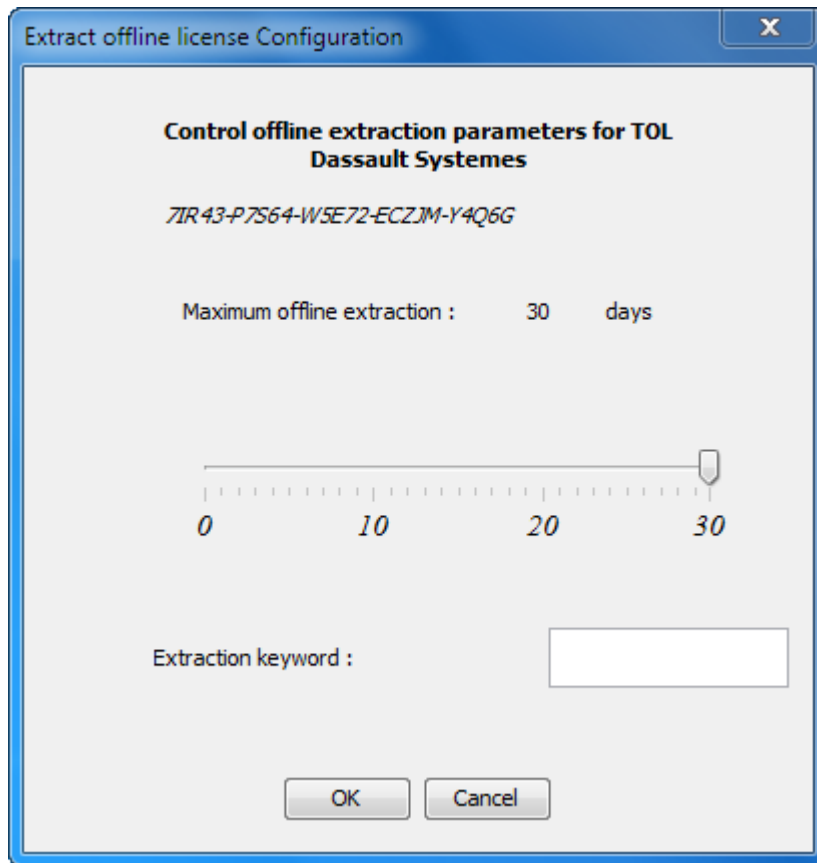
which allows you to set the maximum extraction duration and keyword protection.

Licenses can be extracted for a maximum duration of 30 days in all cases. You can decide to reduce the maximum duration for offline extraction of a given license feature, from 30 days (default) to 0 day, by 1-day increments. When set to 0, offline extraction is prevented for this license feature.

End users then attempting to extract the offline license from the licensing client side for a license feature controlled by a rule will only be able to extract the offline license for the duration specified in the rule.

When an offline restriction is set, the following icon is displayed:

When both an authorization rule and an offline restriction are set, the previous icon is displayed with the

colored background matching the rule type. For example, in the case of an ALLOW rule:

You can also associate a keyword to each license feature using the `Extraction keyword :` field. When a license is protected by a keyword, on the licensing client side the end user has to enter the keyword.

Keywords are not passwords: they are not encrypted. They appear unscrambled in several places, for example in the XML file containing the authorization rules.

When a license has expired or has been deleted, both above controls are kept (if they had been set) by the license server and appear as ghost controls, as for ghost authorization rules.

As for rules, ghost offline restrictions can appear at the bottom of the tab:
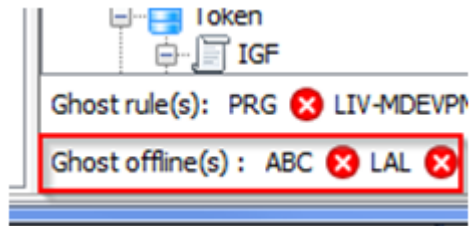
13. To ensure that either a list of users or a list of hosts cannot consume more than a limited quantity of licenses, proceed in the same way, this time by selecting the `Add new rule - Limit` command.

☞ **Note:**

Mixing users and computers is not allowed for RESERVE and LIMIT rules. It is only allowed for ALLOW and DENY rules. In this case, if both users and hosts are declared, then both are checked when granting a license. For example:

- ALLOW USER1 and HOST1: only USER1 on HOST1 will obtain the license
- DENY USER2 and HOST2: USER2 cannot obtain the license whatever the computer. No user can obtain the license if logged onto HOST2.

The **Authorizations** tab now looks like this:
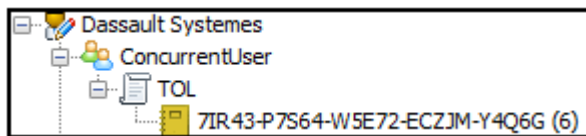
The TOL license is now highlighted in brown, signifying that a "limit" rule has been created.

Here is an example to illustrate RESERVE and LIMIT rules:

Let's assume there are 100 licenses of ABC enrolled in a license server, and that you create a group of users composed of 25 members:

- If you reserve 12 ABC licenses for this group, then you guarantee that at least 12 members of the group can obtain an ABC license. The remaining 25-12=13 members can obtain or not a license depending on the consumption of the 100-12=88 non-controlled licenses. With this rule, a maximum of 88 users not belonging to the group can obtain a license, even if no group member consumes any license.
- If you limit to 12 ABC, then only 12 members of the group can obtain a license. The remaining 25-12=13 members cannot obtain one of the 100-12=88 other licenses, even if some of them are not consumed. With this rule, 100 users not belonging to the group can obtain a license, if they are not consumed by any member group.

How to prevent users or hosts not declared in a license authorization rule from acquiring licenses

A situation may arise in which all the licenses you have acquired have not yet been assigned to existing users/hosts by existing authorization rules. As long as this situation continues, you may consider that there is a risk that users/hosts not referenced by a license authorization rule may acquire licenses.

Consequently, you may wish to be able to partition both existing licenses and licenses purchased in the future in an authorization rule. Using this technique, each declared user/host group will only be granted a specific number of licenses which cannot be used by any other users/hosts.

To illustrate this mechanism in a concurrent user license context, let's assume you have the following users: A,B,C,D,E,F,G,H,I,J,K,L. You want to partition the users into 3 groups: A,B,C in Group1 sharing only one license, D,E,F in Group2 sharing two licenses, G,H,I in Group3 also sharing two licenses. You want to deny access to users J,K,L. The license name is XXX, and you have purchased 10 licenses.

The solution is as follows:

1. create a RESERVE rule for Group1, quantity=1
2. create a RESERVE rule for Group2, quantity=2
3. create a RESERVE rule for Group3, quantity=2
4. create dummy group DummyGroup and create a RESERVE rule linked to DummyGroup, quantity=5.
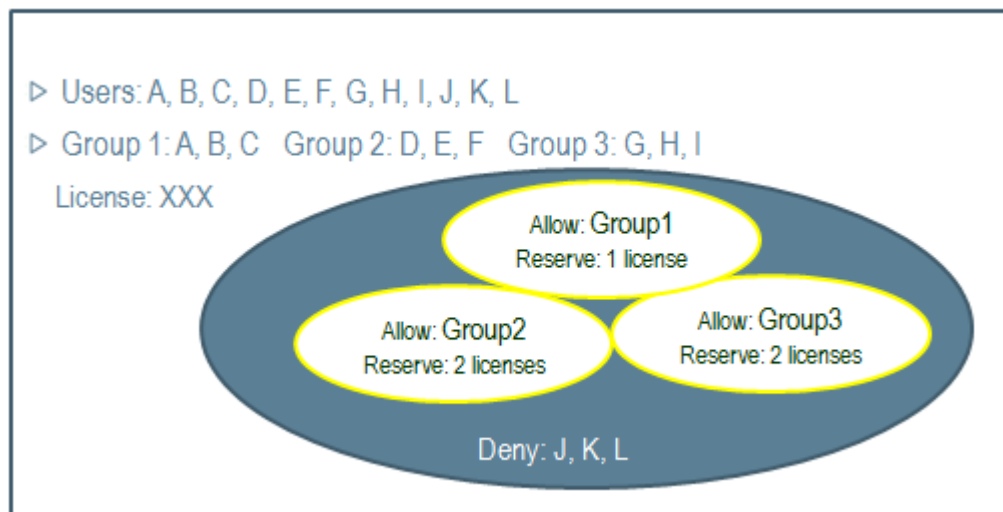
As a result, the remaining 5 licenses are assigned to the dummy group containing no users, so users J,K,L will be denied access to any licenses since they are not referenced by any license authorization rule.

The authorization rules you just set up will be sufficient until you purchase and enroll additional licenses. So yet again there will be a risk that they can be granted to anyone not referenced in the rule. The solution is to reset, once and for all, the quantity of licenses assigned to the dummy group to an exceedingly high number which by far exceeds the number of licenses that you will ever purchase (for example, 1000). Using this technique, even the new licenses will be denied to users/hosts not referenced by the rule, and you will not have to edit the rule each time you add additional licenses.

The fourth RESERVE rule in this context would then be, for example: create a RESERVE rule for DummyGroup, quantity=1000.

To illustrate this mechanism in a named user license context, let's assume that 70 licenses for ABC have been enrolled. You could create the following RESERVE rules:

• reserve 30 ABC licenses for HostA: HostA users are granted access to 30 ABC licenses
• reserve 30 ABC licenses for HostB: HostB users are granted access to 30 ABC licenses
• reserve 1000 ABC licenses for a non-existing dummy host, for example named "NonExistingHostName": nobody (including HostA/B) can use the remaining 10 ABC licenses (70-30-30=10), because firstly the number of licenses reserved is greater than the number of currently enrolled ABC licenses, and secondly because in any case nobody can log onto host "NonExistingHostName" which of course does not exist.

The rule must be modified to enable anybody else to use the 10 ABC licenses and any future licenses.

☞ **Note:** The number of reserved licenses can be greater than the number of enrolled licenses not only when a RESERVE rule has been configured this way, but also for example when some licenses expire after the RESERVE rule has been configured.

14. To set a rule for a named user license, proceed in the same manner.

When you assign a rule to a named user license, this rule takes precedence over all assignments for the same license made on the Live Collaboration Server.

Let's take the following example.

User1 is granted access (on the Live Collaboration Server) to the named user license for the feature `LIV-MDEVPM`.

You then set an ALLOW authorization rule (on the DS License Server) granting User2 (who must previously have been declared as a named user in the P&O database on the Live Collaboration Server) access to the named user license for the feature `LIV-MDEVPM`.

The result is as follows:

- User2 can use the feature `LIV-MDEVPM`
- User1 CAN NO LONGER use the feature `LIV-MDEVPM`: the reason is that an ALLOW-type authorization rule has now been set for this feature on the DS License Server side. This rule grants the feature license to ONLY User2. And even though User1 was previously granted access via an Live Collaboration Server-side tool, the authorization rule takes precedence. If User1 attempts to log on, the following message will be displayed:
  No license assigned to this user

☞ **Note:**

If a license is removed or expires, and a rule had been assigned to that license, the rule is not deleted. It becomes a *ghost rule* and is displayed in the lower right-hand corner:
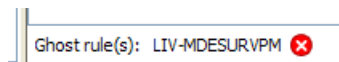
This allows the administrator to avoid having to create the rule again if a new license is added. To display the properties of the ghost rule, click on its name. To remove the ghost rule, click the red icon.

☞ **Note:**

In the case of named user licenses, if you add a rule after some licenses have already been granted to named users, then you may have to manually recycle them.

In example 1, let's assume that named user ABC license is granted to Steve:

1. Add a rule DENY Steve on ABC.
2. Steve can no longer use ABC, but the ABC license cannot be used by someone else.
3. You have to recycle Steve's licenses.

In example 2, let's assume that there are 10 named user XYZ licenses and that 2 of them are granted to Alan and Barbara:

1. Add a rule RESERVE 9 XYZ to UserGroup1. (Alan and Barbara don't belong to UserGroup1).
2. Alan and Barbara can still use XYZ and only 8 users of UserGroup1 can use XYZ.
3. You have to recycle either Alan's or Barbara's licenses.

15. Edit an authorization rule to monitor the number of licenses consumed by the user, user group, host, host group, IP range or IP range group linked to the rule.

In this simple example, we created an ALLOW rule for the user `plmadm` on the LIV-MDEVPM feature. To edit the rule, click on the rule and right-click to select the `Edit rule` command. The `Currently consumed` column specifies that one LIV-MDEVPM license has been consumed by user `plmadm`:

☞ **Note:** The term "currently consumed" means that the license has been granted to the user and the licensed process has been effectively executed at least once, in particular for named user licenses: it does not mean that the licensed process is being executed at the same time as you edit the rule. The `Currently consumed` column is not displayed when setting a rule, only when editing a rule.

In the following example, we created a user group named MyGroup (containing the users `demoreviewer` and `administrator`), and created a rule reserving five licenses for the group. The `Currently consumed` column specifies that one LIV-MDEVPM license has been consumed by a member of the group:

The list may also contain several lines. For each line (corresponding to a user, a host machine, a group of users or a group of host machines), the number of licenses currently consumed is displayed.

The number displayed is the number of licenses, even if the rule is declared for host machines. For example, this number can be very high for only one host machine declared in the rule, if the host machine is an application server hosting a Live Collaboration server.

When the number is red, it means that the rule is not enforced. This can happen when the rule has been applied after a named user license has been previously granted to a named user.

For example, in the following LIMIT rule related to the CPF license, the following rules have been set: 100 CPF maximum for GroupA and 2 CPF maximum for GroupB. 2 CPF are consumed by GroupA and 4 CPF are consumed by GroupB:

"4" appears in red, because it is a case of over-use: the rule limiting to 2 has been set after the 4 named user CPF licenses have been granted to 4 named users.

For a DENY rule, usually the number is equal to 0. However, if it is not the case it is displayed in red.

When a name is present in a rule as an individual item and also as a member of one or several groups, then only the individual declaration is taken into account by the rule.

For example, if Oliver belongs to UserGroup1 and a RESERVE rule is defined as 1 license for Oliver and 4 licenses for UserGroup1, we consider that Oliver was not a member of UserGroup1: when a license is granted to Oliver, 4 licenses are still reserved for other members of UserGroup1.

When a name is present in several groups (and not as an individual item), only the group having the lowest alphabetical name is taken into account by the rule.

For example, if Oliver belongs to UserGroup1 and UserGroup2, and a RESERVE rule is defined as 10 licenses for UserGroup1 and 15 licenses for UserGroup2, we consider that Oliver was not a member of UserGroup2: when a license is granted to Oliver, only 9 licenses are now reserved for other members of UserGroup1, but 15 licenses are still reserved for other members of UserGroup2.

When a user uses the same license from several computers, only the last grant is taken into account by the rule. This can happen when a named user uses CPF from several application servers: the last computer will be used in the rule.

For example, if a LIMIT rule is defined as 10 licenses for Computer1 and 15 licenses for Computer2, and Oliver logs on to Computer1 then on to Computer2 while staying logged on to Computer1, the same CPF license is granted to Oliver but it is first counted among the 10 licenses for Computer1 then, when Oliver logs on to Computer2, counted among the 15 licenses for Computer2 (and no longer among the 10 licenses for Computer1).

You can also monitor license usage by connecting to the license server in command-line mode then running the `getLicenseUsage` command. For each license currently consumed, if the license has been granted by an authorization rule, the individual name or group name will be displayed in the `authorization item` field.

In our example in which we created the group MyGroup, the `getLicenseUsage` command returns the following information:

```
Dassault Systemes (5E756A80-1C80-478D-B83A-1D5913677621)
.....
CPF maxReleaseNumber: 17 type: NamedUser count: 11 inuse: 2 customerId:
 DSFRA123
internal Id: PLMADM granted since: Jul 5, 2013 6:45:30 PM last used at:
 Jul 5, 2013
7:29:58 PM  by user: PLMADM on host: WIN-KNKSL07ILFV
(FFFFFFFFFFFFFFFF-c0a81f80.0)
internal Id: demoreviewer granted since: Jul 5, 2013 7:24:02 PM last used
 at: Jul 10, 2013
10:32:50 AM  by user: demoreviewer on host: WIN-KNKSL07ILFV
(FFFFFFFFFFFFFFFF-c0a81f80.0)
...
internal Id: demoreviewer granted since: Jul 5, 2013 7:24:15 PM last used
 at: Jul 10, 2013
10:02:50 AM  by user: demoreviewer on host: WIN-KNKSL07ILFV
(FFFFFFFFFFFFFFFF-c0a81f80.1)
authorization item: MyGroup
...
...
```

Importing and Exporting License Authorization Rules

This section explains how to back up license authorization rules and corresponding data (users, hosts, groups) by exporting the data to an XML file, and how to import an XML file containing previously backed up authorization data.

Export Authorization Rules

1. Select the **Authorizations** tab.

   A toolbar is located in the top right corner of the tab:
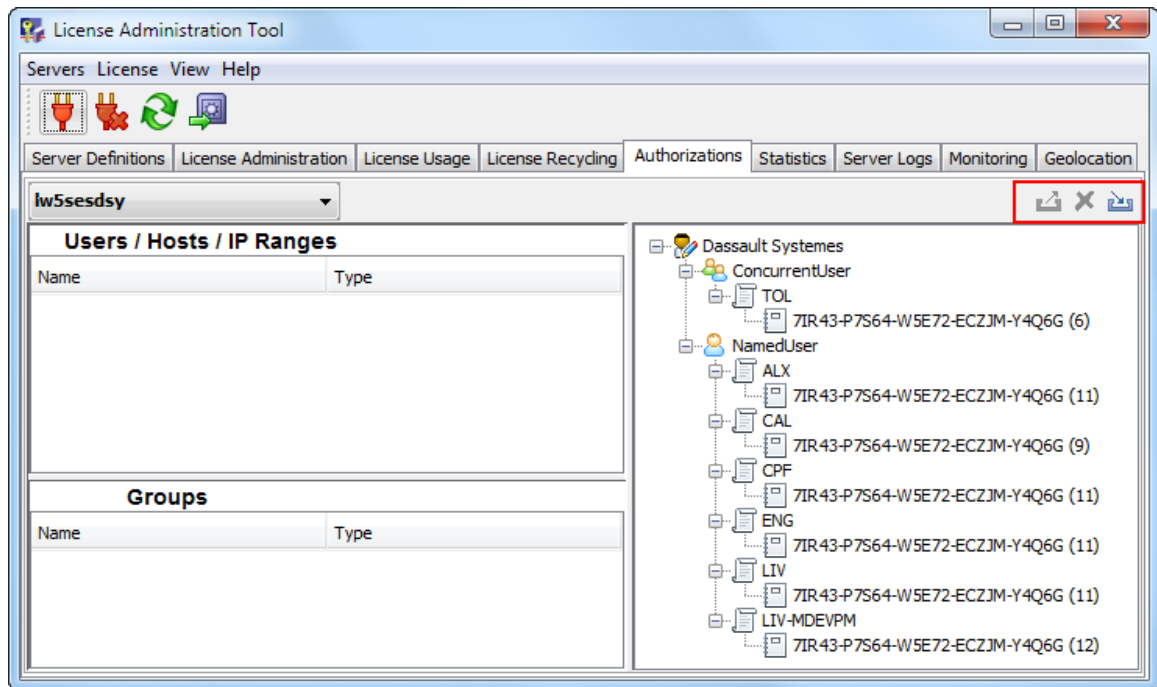
   The toolbar looks like this :

   The first two buttons, from left to right (Export and Reset) are grayed out because at this stage you do not

   have any authorization data to export. However, the `Import` button is activated since you can at least import authorization data backed up in an existing XML file.

2. Create some users, hosts and/or groups and create some authorization rules linked to the users, hosts and/or groups you created (as explained in *Setting License Authorization Rules*.

   Let's use the following rules for example:
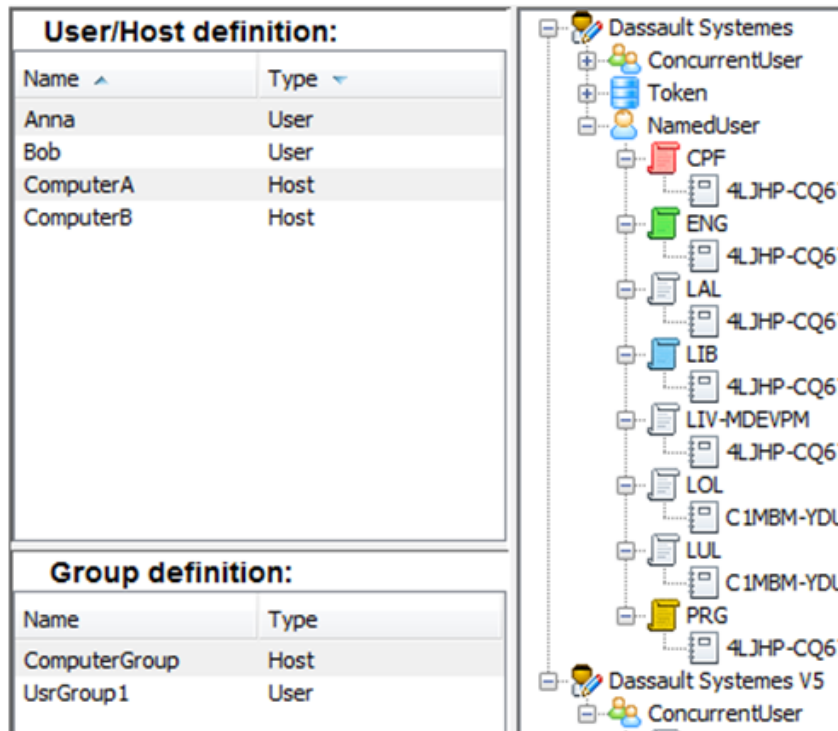
Once you have created a user, host, group or rule, all the icons are activated like this:

3. Click the `Export` button and specify a filename in the dialog box displayed to save the file to XML format.

The XML file is structured as follows, for example:

```
<authorizations>
    <users>
        <user id="1">Anna</user>
        <user id="2">Bob</user>
    </users>
    <usergroups>
        <usergroup id="1">
            <name>UsrGroup1</name>
            <user id="1"/> <!-- Anna -->
            <user id="2"/> <!-- Bob -->
        </usergroup>
    </usergroups>
    <hosts>
        <host id="1">ComputerA</host>
        <host id="2">ComputerB</host>
    </hosts>
    <hostgroups>
        <hostgroup id="1">
            <name>ComputerGroup</name>
            <host id="1"/> <!-- ComputerA -->
            <host id="2"/> <!-- ComputerB -->
```

```
            </hostgroup>
     </hostgroups>
     <editor name="Dassault Systemes">
          <model type="NamedUser">
              <feature name="CPF">
                  <authorizationlist ruletype="Deny">
                      <name>CPF</name>
                      <user id="2"/> <!-- Bob -->
                  </authorizationlist>
              </feature>
              <feature name="ENG">
                  <authorizationlist ruletype="Allow">
                      <name>ENG</name>
                      <host id="1"/> <!-- ComputerA -->
                  </authorizationlist>
              </feature>
              <feature name="LIB">
                  <authorizationlist ruletype="Reserve">
                      <name>LIB</name>
                      <usergroup quantity="2" id="1"/> <!-- UsrGroup1 -->
                  </authorizationlist>
              </feature>
              <feature name="PRG">
                  <authorizationlist ruletype="Limit">
                      <name>PRG</name>
                      <hostgroup quantity="1" id="1"/> <!-- ComputerGroup
 -->
                  </authorizationlist>
              </feature>
          </model>
     </editor>
</authorizations>
```

The `<offlinerestrictions>` tag can be added under the `<feature>` tag in parallel to the `<authorizationlist>` tag for managing offline restrictions:

```
<feature name="MD2">
                <offlinerestrictions>
                     <name>MD2</name>
                     <keyword>secret</keyword>
                     <maxduration>21</maxduration>
                </offlinerestrictions>
          </feature>
```

Import Authorization Rules

1. Before importing authorization data, decide whether or not to remove the existing authorization data on your license server.

   Removing existing authorization data guarantees that the result will be exactly the content of the imported file. If you do not remove it, you will be prompted to merge manually the imported data with the existing data.

   Click the Reset ![X] button and click **OK** when prompted to remove existing data if required.

2. To import authorization data, click the Import ![icon] button and use the dialog box to select an XML file to import.

If you removed existing authorization data from your license server, the imported data simply replaces it.

For example, importing the example XML file above creates the following rules illustrated below:
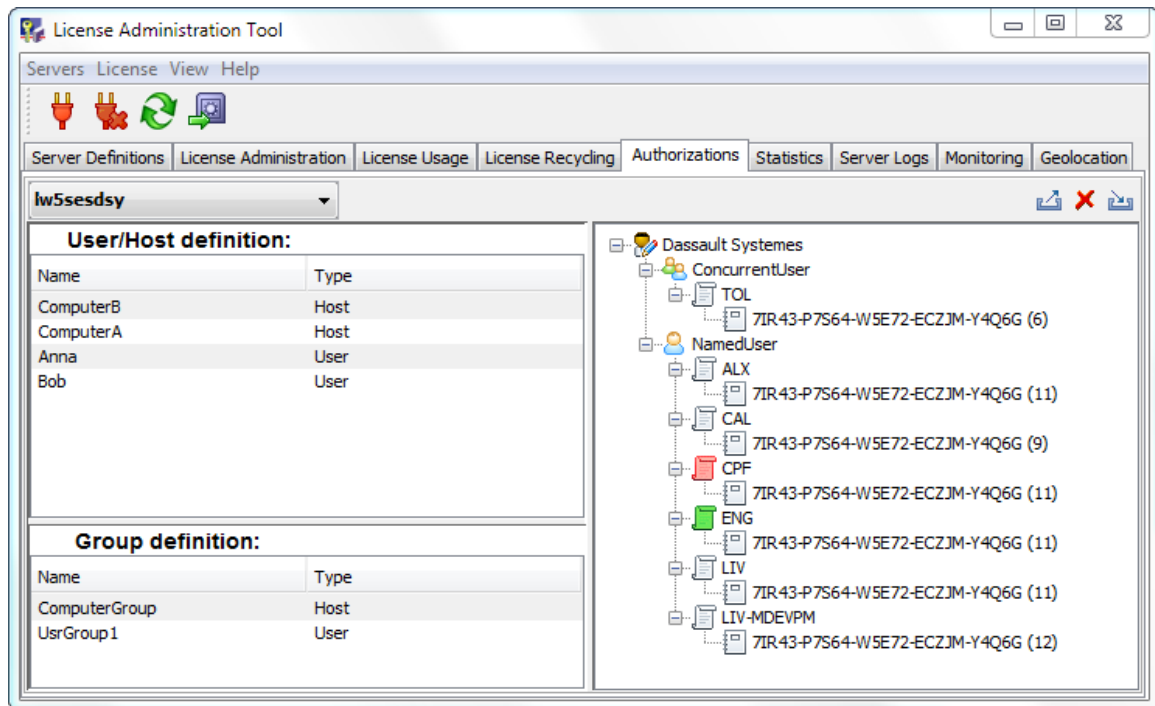
3. If required, edit the original XML file you imported.

   For example, declare new user Chuck, and remove the rule linked to the ENG license.

4. Validate your XML file.

   Use your favorite XML tool to reference the following XSD file:

   `DSLS_installpath\OS\resources\xsd\DSLSAuthorizations.xsd`

   to parse the XML file and validate its structure and syntax.

5. Re-import the file.

   This time, because you did not remove the existing authorization data from your license server, a dialog box will be displayed prompting you to merge the existing and imported data:
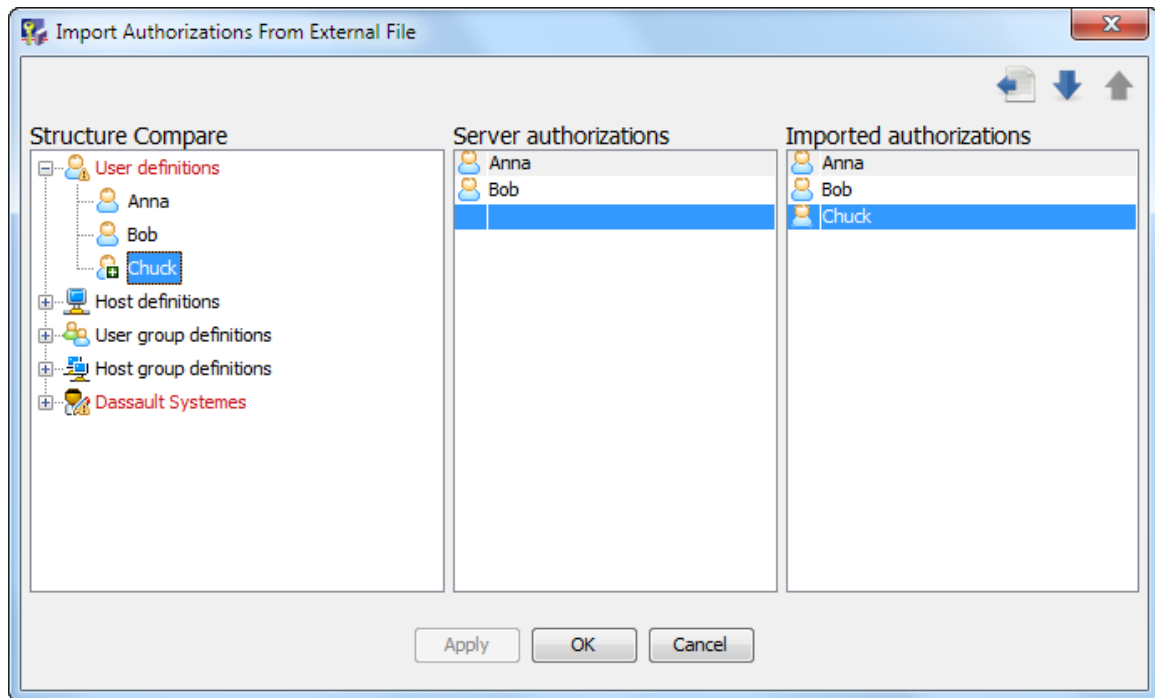
Expand each highlighted node to see the full details:
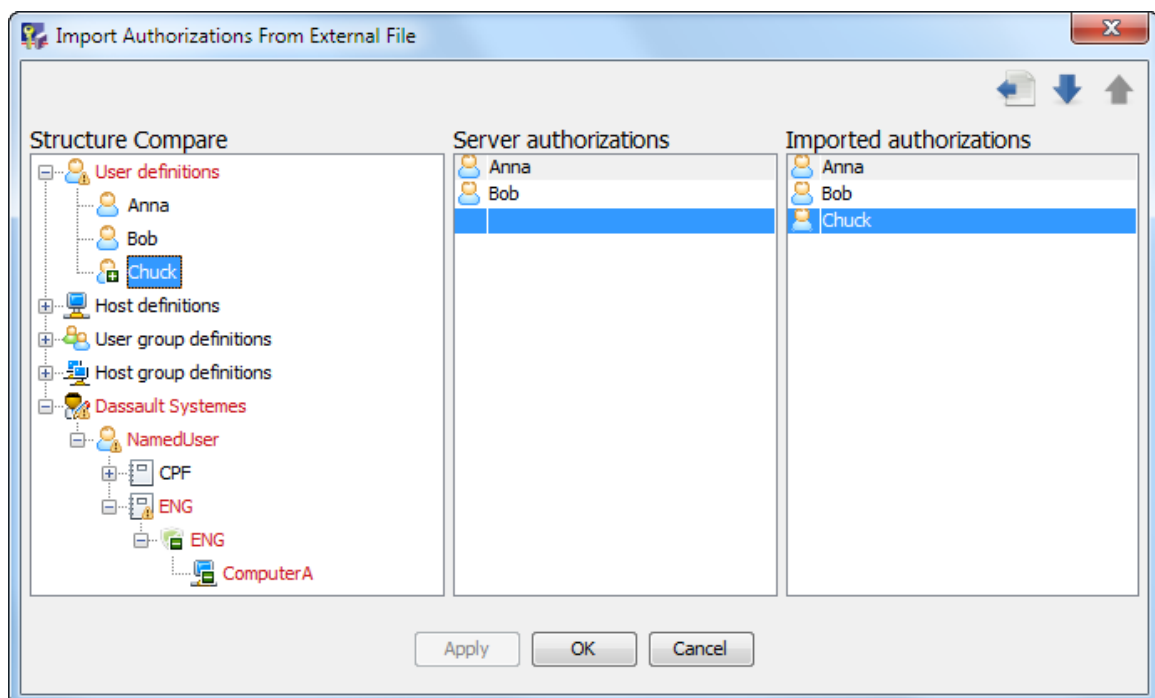
6. Resolve the merge.

The following illustration describes the meaning of the different symbols in the merge dialog box:
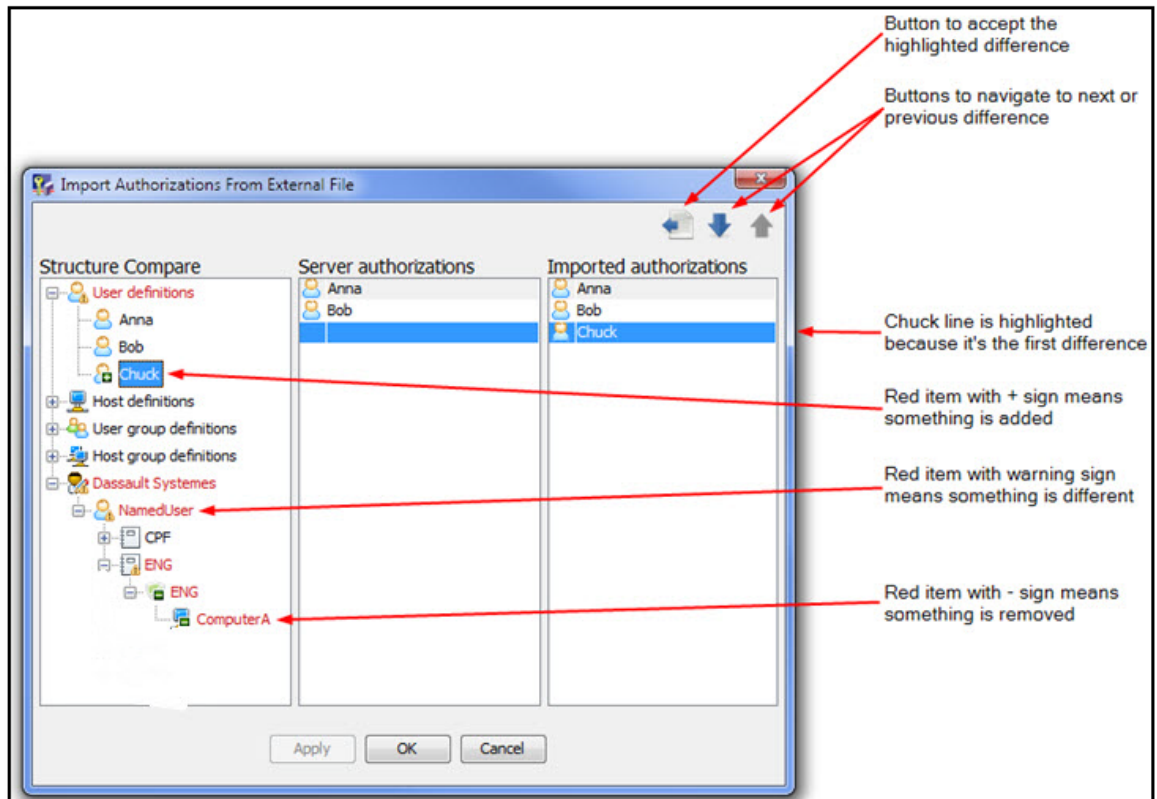
In the merge dialog box:

- a red item with a warning symbol indicates that something is different
- a red item with a "+" symbol indicates that something has been added
- a red item with a "-" symbol indicates that something has been removed.

In our example, user Chuck has been added, and the rule linked to the ENG license has been removed.

The `Structure Compare` column provides a synthetic view resulting from the comparison of the existing and imported data, in the following order:

- user definitions
- host definitions
- user group definitions
- host group definitions

The `Server Authorizations` column lists the definitions for each category.

In our example, user Chuck is highlighted in the `Structure Compare` and `Imported Authorizations` column because it is the first difference detected. The "+" symbol indicates that the definition has been added.

To accept this first difference, click the left arrow: in this case, the user Chuck is added to the `Server Authorizations` column, and the "+" symbol is removed.

Click the down arrow to navigate to the next difference detected, and click the left arrow if you accept the fact that the ENG license rule has been removed.

All text in red becomes black once you accept the difference.

7. Click **Apply** or **OK** to acept the changes.

The updated data is then displayed in the **Authorizations** tab:
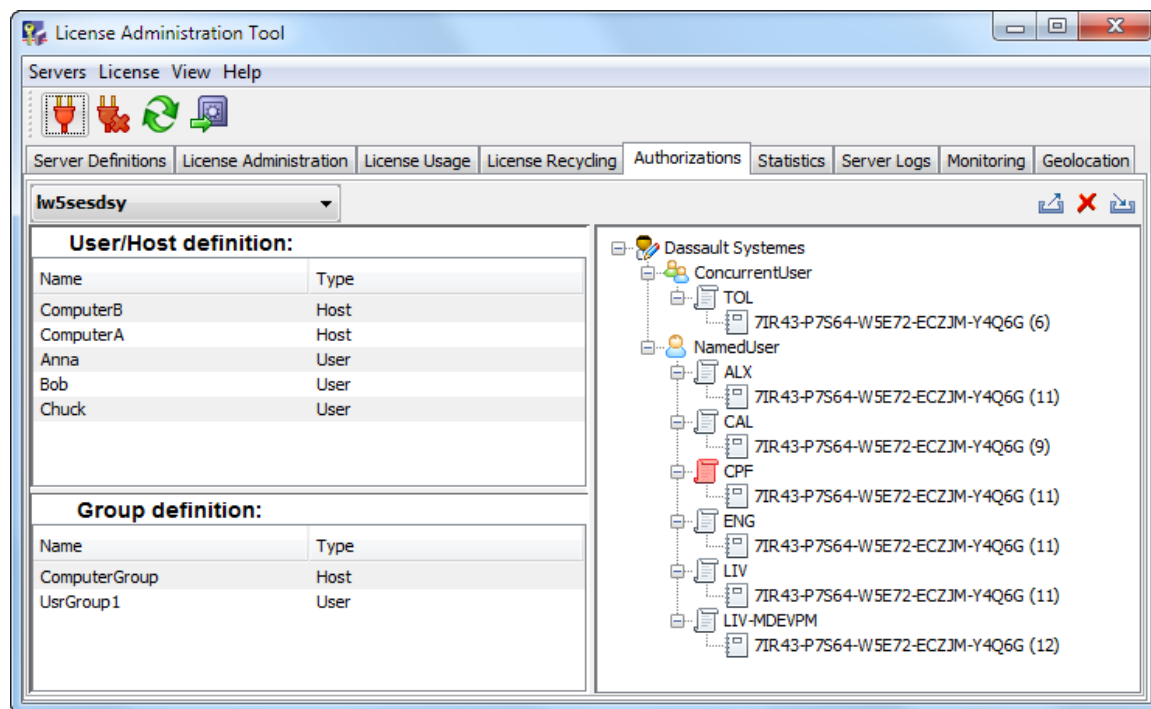
Getting Information About the Authorized Country of Use for Licenses

The **Geolocation** tab identifies for a given license server the country in which the licenses enrolled on the server are authorized, not the country in which the licenses are really being used.

1. Select `Start - (All) Programs - DS License Server - License Server Administration` to launch the **License Administration Tool** if it is not already launched.
2. Connect to the server.
3. Click the **Geolocation** tab, then select if necessary the desired server.

   The **Geolocation** tab looks, for example, like this:
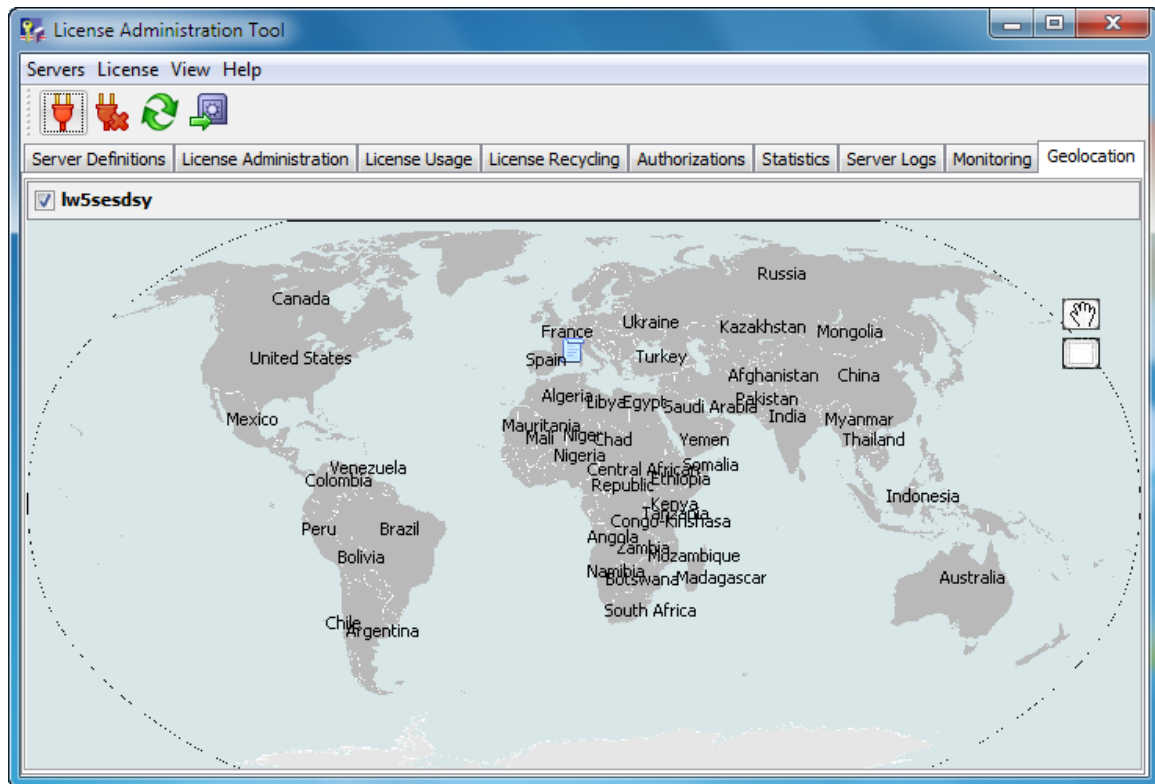
4. Zoom in on the world map by left-clicking and dragging a box around the region you are interested in.

The symbol identifies a country for which licenses are authorized:
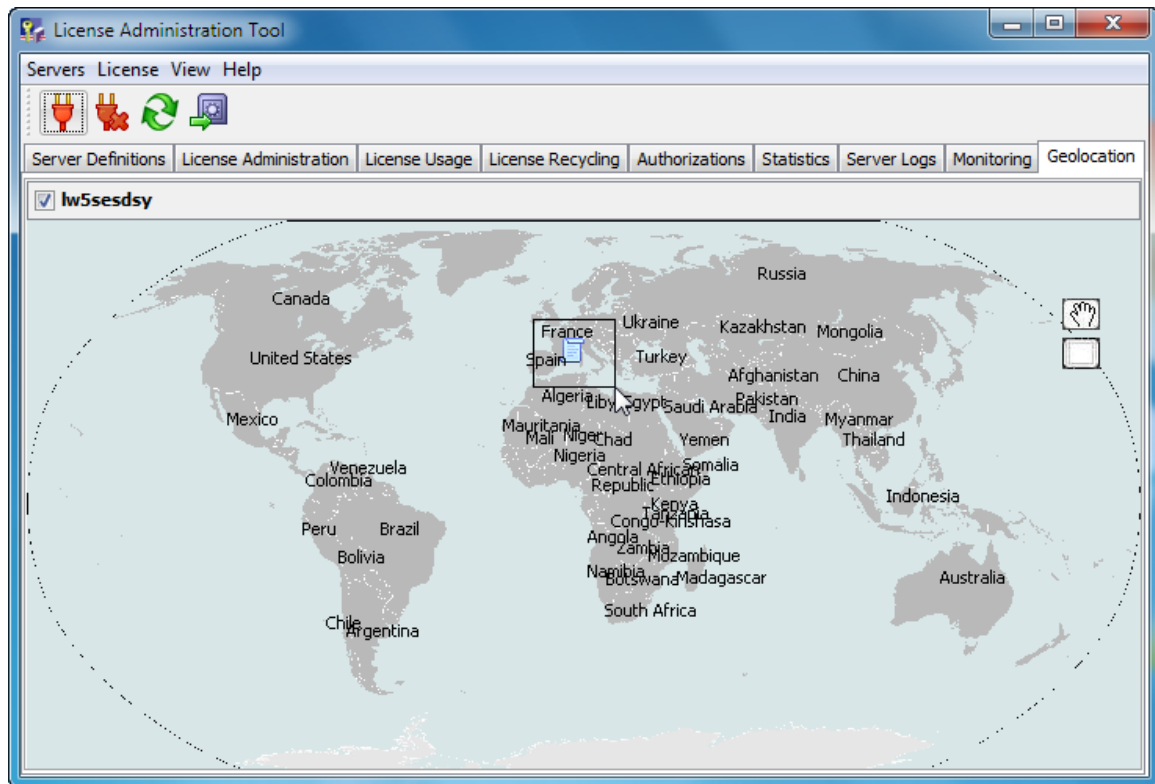
The country is the one indicated in the **Customer Country** column in the **License Administration** tab.

Zooming on France displays the following:
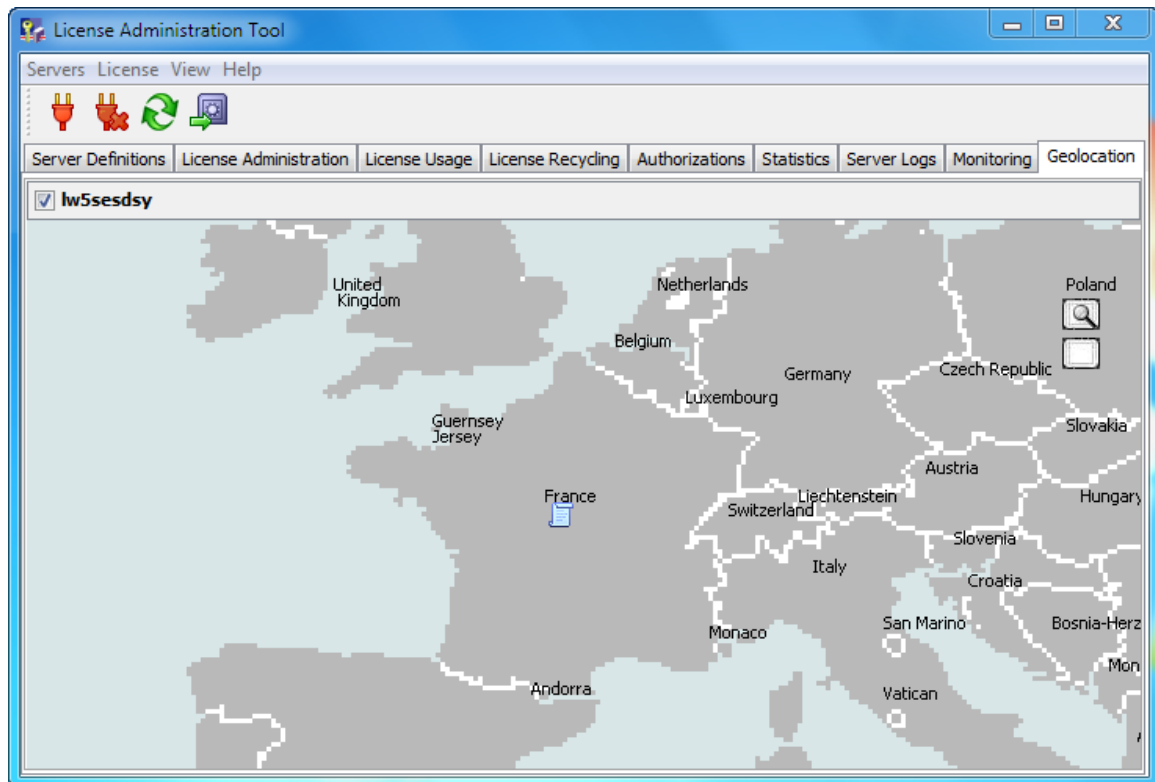
5. Point to the ▤ symbol to obtain additional information:
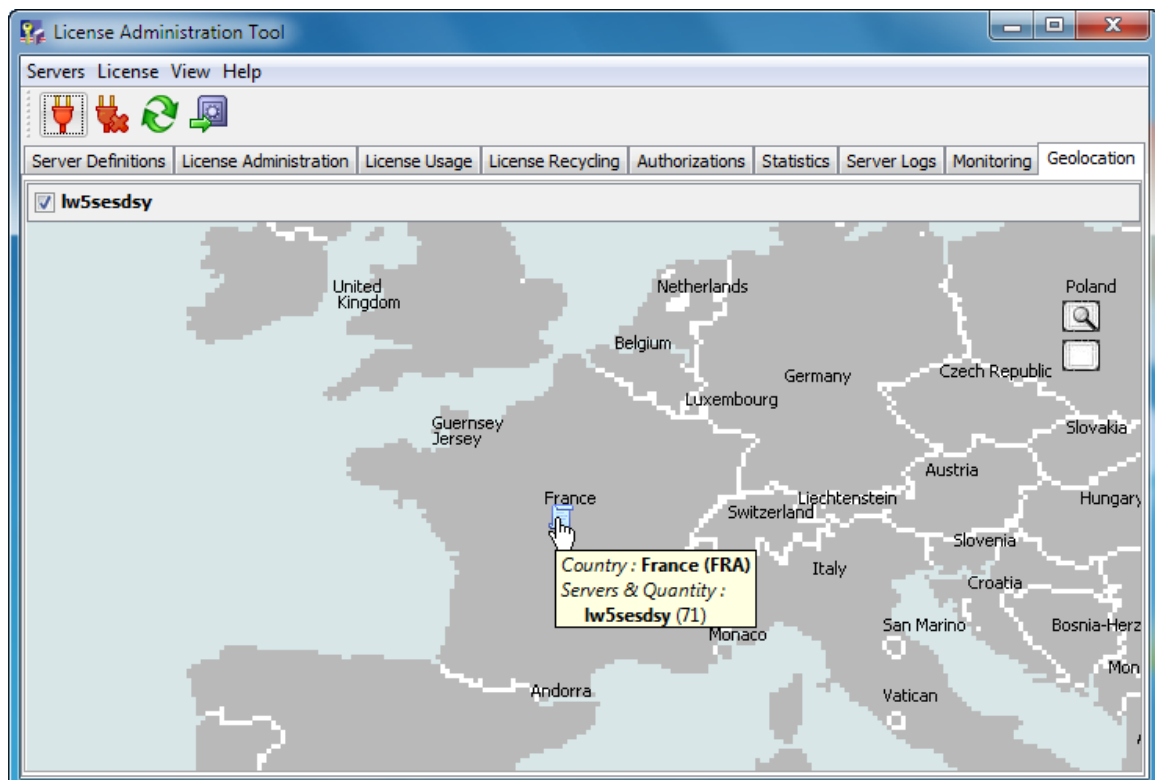
This displays:

- the authorized country
- the name of the license server on which the licenses are enrolled
- the number of licenses.

6. Click the ▭ symbol to the right to reframe the map.

7. Click the 🖐 symbol to toggle to be able to move the map by dragging it.

8. To return to zoom mode, click the 🔍 symbol.

Tracking License Server Operation

This sections presents the tools and techniques used for tracking license server operation.

Tracking License Statistics

Different types of license statistics are available using the **Statistics** tab.

1. In the **Server Configuration** dialog box, accessible when viewing your license server properties, check the **Enable license usage statistics** option.
2. Select the **Statistics** tab.
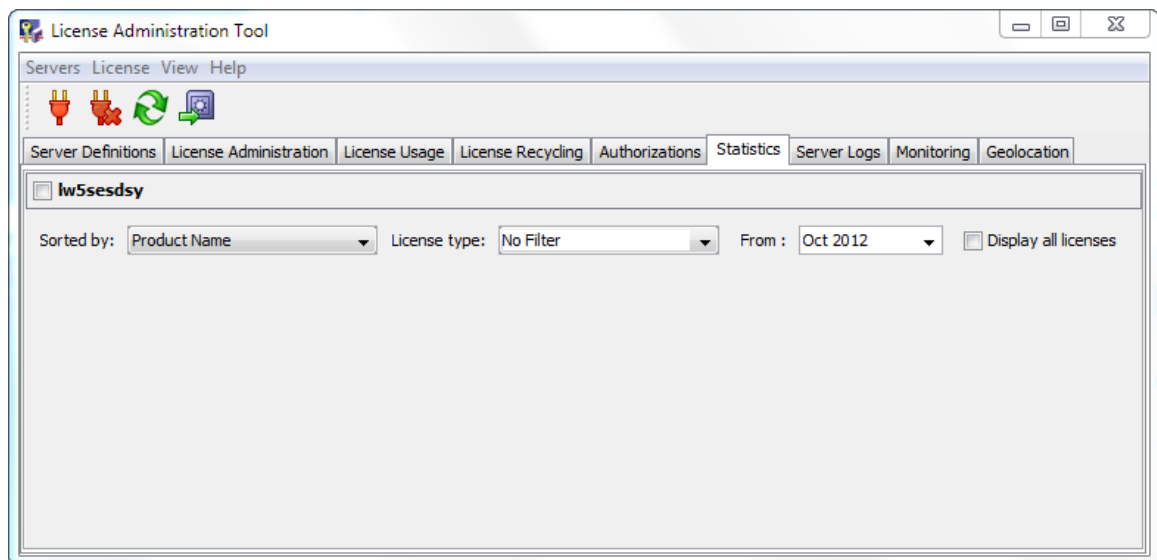
3. Check the check box for the name of the license server:

   This displays the statistics tools for the selected server:
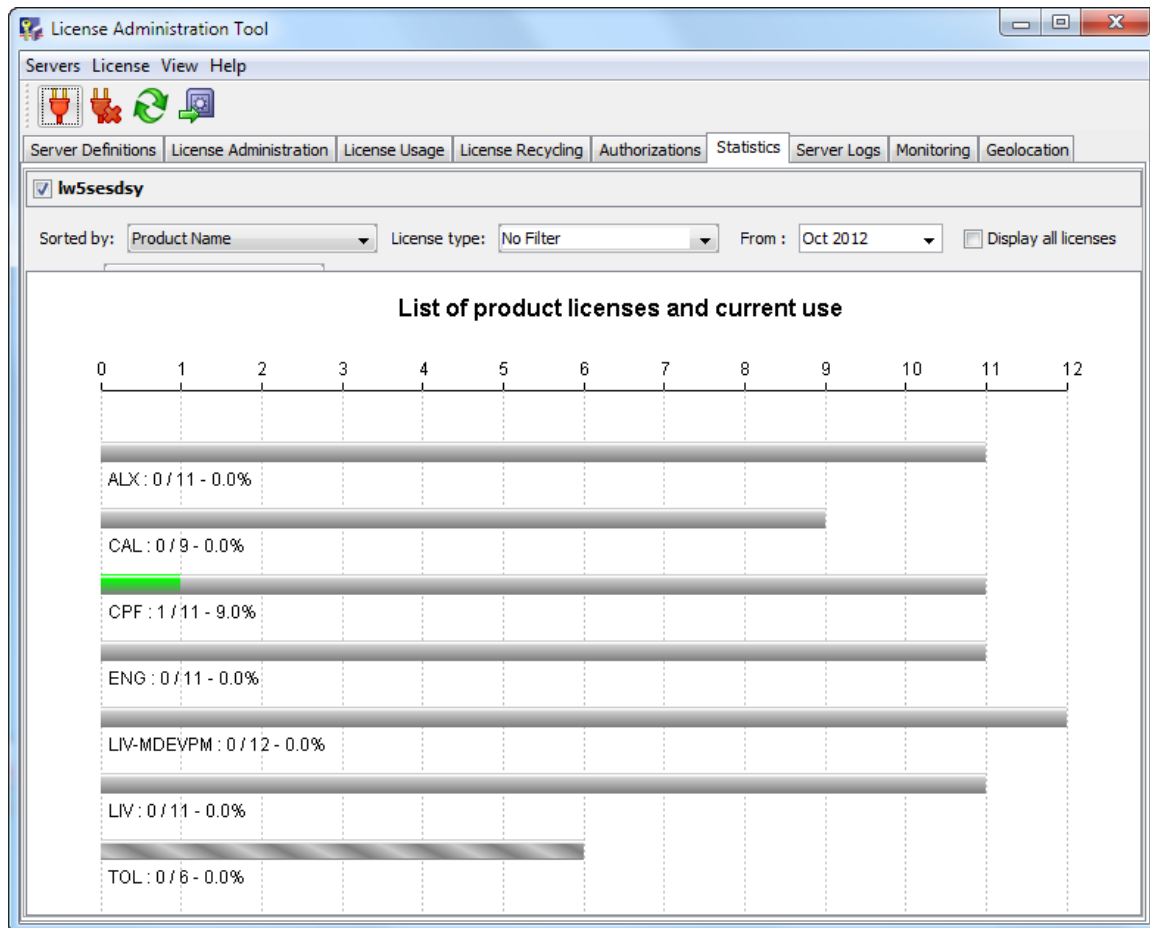
4. Use the **Sorted by:** pulldown list to select how the license statistics are presented in the chart:

Product name	License statistics are presented according to the feature name (this is the default and is illustrated above).
Number of licenses used	The features for which the highest number of licenses is currently being used are presented at the top of the list.
Number of licenses available	The features for which the highest number of licenses are available are presented at the top of the list.
Percentage of used licenses	The features for which the highest percentage of available licenses are currently being used are presented at the top of the list.

5. Use the **License type:** pulldown list to specify the types of licenses for which you want to view statistics:

No Filter	No filter is applied: all licence types are displayed.
Named user	Only named user license statistics are displayed.
Concurrent	Only concurrent license statistics are displayed.
Token	Only token license statistics are displayed.

6. Use the **From :** pulldown and navigate to specify the month when license usage statistics logging is started.

By default, the starting month is the current month of the preceding year.

You can extend (but not shrink) this one-year period by specifying the starting month of the statistics to be logged.

Use the << and >> symbols to select the year. Use the < and > symbols to select the month.

7. Check the **Display all licenses** checkbox if required.

    This checkbox will help you avoid losing statistical information about expired licenses which are not renewed.

    By default, only features with licenses which are still valid are displayed in this tab.

    However, checking this check button displays features whose licenses have expired or have been deleted. Activating this option is CPU-intensive since it consumes a lot of resources on the server side, and consequently has to be used with caution.

    You can use this possibility with the **From :** pulldown, keeping in mind that the further back logging begins, the more resources are consumed on the server.

    The minimum duration is 12 months.

8. Use the **Editor:** pulldown list to specify the editor of licenses for which you want to view statistics:

Dassault Systemes	Only Dassault Systemes 3DExperience license statistics are displayed.
Dassault Systemes V5	Only Dassault Systemes V5 license statistics are displayed.
Dassault Systemes V4	Only Dassault Systemes V4 license statistics are displayed.

9. Analyze the statistics.

    Whichever way you filter the results, named user licenses are represented by a solid light grey chartbar, and concurrent licenses by a light grey chartbar with stripes. A three-letter code for the license is displayed, alongside figures specifying the number of licenses used/available, for example:
    CPF : 2/11
    LIV-MDEVPM : 1/12

    When licenses are currently being used, a section of the chartbar proportional to the percentage of available licenses being used for a given feature is displayed in green.

10. Point to the chartbar to display a magnifying glass which in turn displays information about the licenses.

    Three numbers are displayed for each feature:

    *   the number of currently used licenses (990 in the example below)
    *   the number of currently valid licenses (1000 in the example below)
    *   the percentage of current usage (99 in the example below).
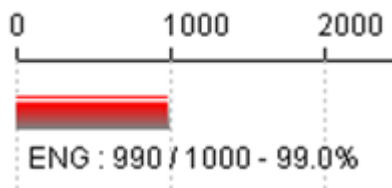
11. Click the chartbar.

    Another dialog box opens displaying month-by-month statistics.

The dialog box displays license usage statistics over the past 12 months or more, depending on the **From :** value you set. Click the chartbar for the desired month for daily information about license usage for a specific license. Click again for hourly information.

👉 **Note:** The main section of the **Statistics** tab reports the licenses currently in use, at the present moment. So the numbers displayed in this panel can go up and down, depending on instantaneous usage. When you click on a specific license (using the chartbar), you enter the detailed mode, with vertical chartbars for monthly, daily or hourly usages. This provides access to the maximum usage for the given period.

Tracking Server Logs

You can consult license server logs using the **Server Logs** tab.

1. Select the **Server Logs** tab.

   The tab looks like this:
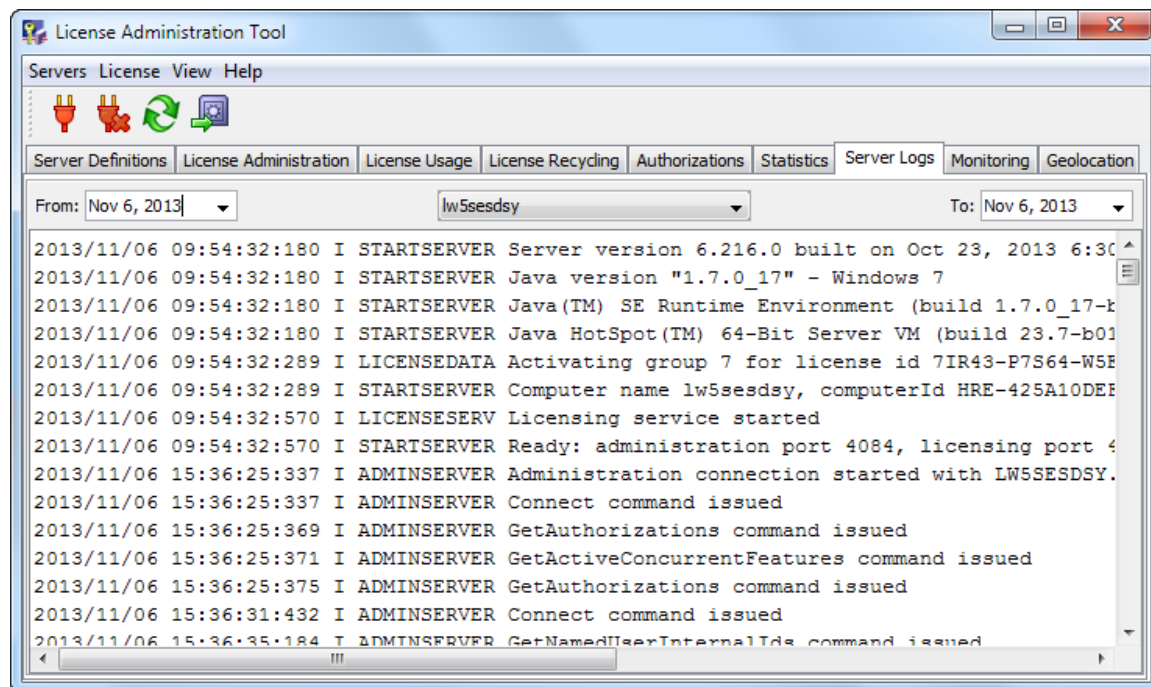
   Ctrl-F allows searching in the log.

2. Specify the dates from when and until when you want to view log information, and select the server:
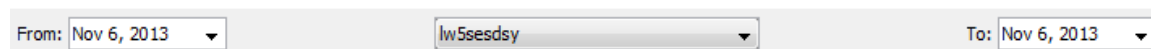
   The exact moment corresponding to the **From :** date is at 00H01 local time (time zone) of the computer on which the **License Administration Tool** is running.

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The exact moment corresponding to the **To :** date is at 23H59 local time (time zone) of the computer on which the **License Administration Tool** is running.

However, time values displayed are formatted according to the local time (time zone) of the computer on which the license server is running.

The **From :** date value (respectively **To :**) is automatically set to the **To :** date value (respectively **From :**) if the **To :** date value (respectively **From :**) is manually set to a value lower (respectively higher) than the current **From :** (**To :**) date value.

Every event is time-stamped.

The log contains:

• information (identified by the letter I) about license server events such as starting and stopping the server, enrolling licenses, etc.
• warning messages (identified by the letter W) displayed in blue
• error messages (identified by the letter E) displayed in red.

If you activated the **License usage tracing...** option in the **Server Configuration** dialog box, traces of license request and detach operations and timeouts will be logged. The following example shows the log trace when an LIV license has been requested and granted (if you selected the LIV license for license usage tracing):

```
2013/10/07 15:26:53:836 I LICENSESERV LIV (Dassault Systemes)
granted to client LW5SESDSY(42721022FAFE292A-0ae84530.0)
:ses:SES@DS.S-1-5-21-842925246-2139871995-725345543-13721.0AE84530.0.WWN-42721022FAFE292A:
C:\Program Files\Dassault Systemes\B216\win_b64\code\bin\PLM3DNav.EXE
```

Refer to *Error, Information and Warning Messages* for a full description of traces.

Monitoring the Server

You can monitor license server performance using the **Monitoring** tab. Monitoring data is reset every time the license server is restarted, so prior data is not displayed.

1. Select the **Monitoring** tab.
2. Select a standalone server to monitor.

The tab looks like this by default when you are monitoring a standalone license server:
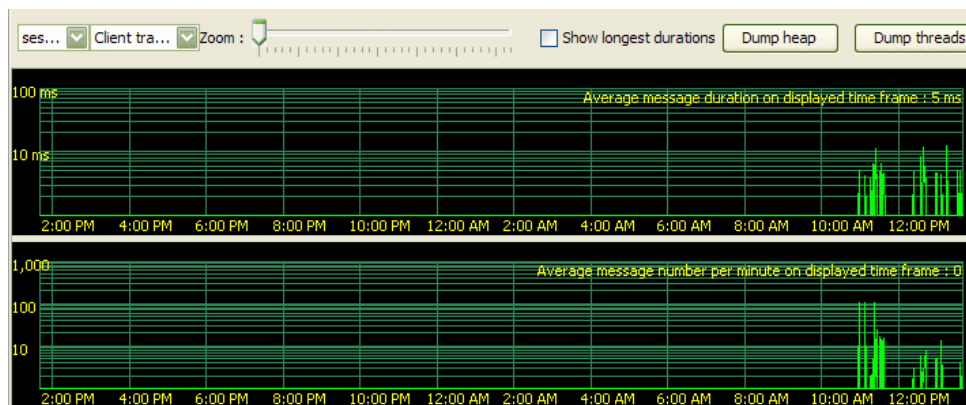
Activity over the last 24 hours is displayed in green bar graphs. The monitoring interval is one minute.

Time values displayed are formatted according to the local time (time zone) of the computer on which the **License Administration Tool** is running.

3. Use the zoom slidebar to zoom on a particular period over the last 24 hours.

You can zoom down to display a period in intervals of 5 minutes:
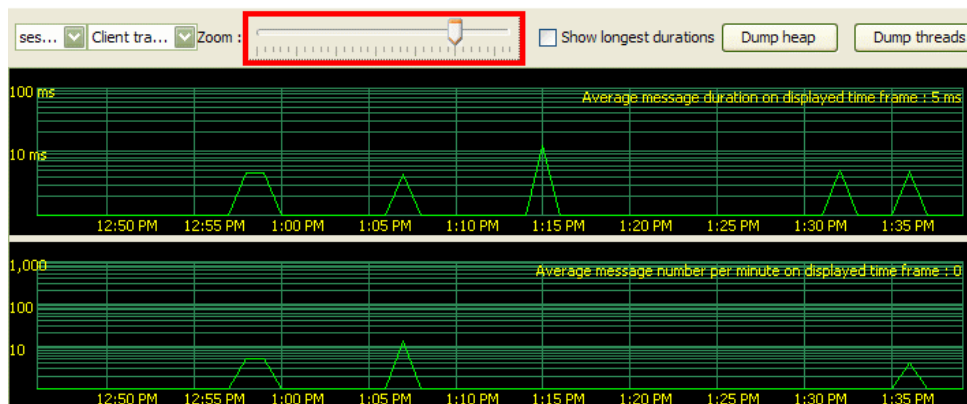
The upper part of the display monitors the average duration of processing, by the license server, of client messages which the license server receives.

The lower part of the display monitors the average number of client messages per minute processed by the license server.

The different graphs are displayed on a logarithmic scale to be able to show both very high and very low traffic. With a non-overloaded server, the average message processing duration should be a few milliseconds.

4. Set the **Show longest durations** check button to display the longest message processing durations.

The red bar graph represents the longest duration of a client message for each minute of the displayed activity period:
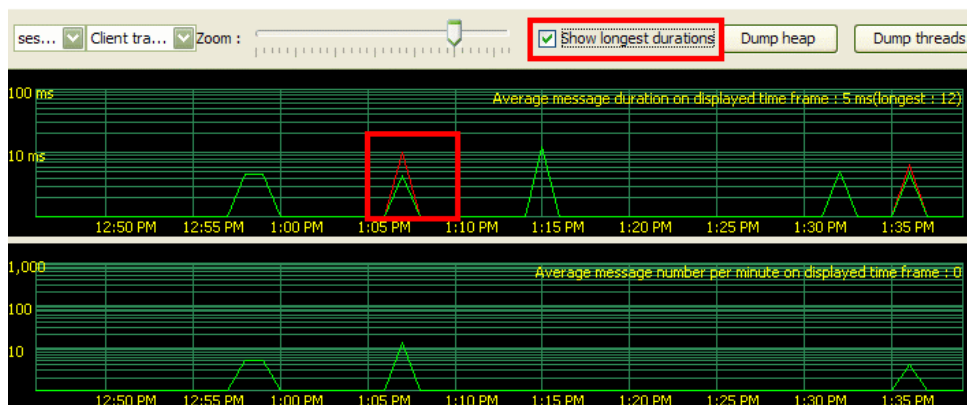
5. Point anywhere over the window to move a vertical line over the specific minute of interest and display additional information.

For example:

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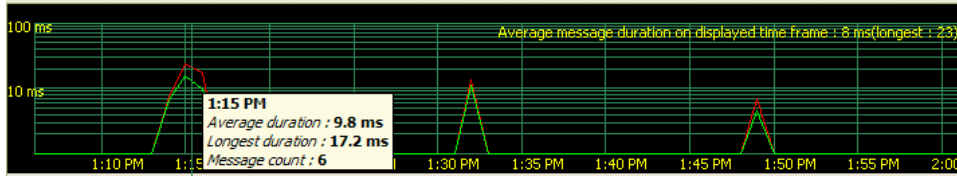
This displays, for the specified minute, the average processing duration, the longest processing duration and the number of client messages received.

6. In standalone server mode, choose `Client traffic` or `Admin traffic`.

Client traffic	Monitors messages sent by the license clients to the license server. The license clients are the processes which request licenses to the license server.
Admin traffic	Monitors messages sent by the **License Administration Tools** to the license server.

7. If you select a failover server, similar tools become available:
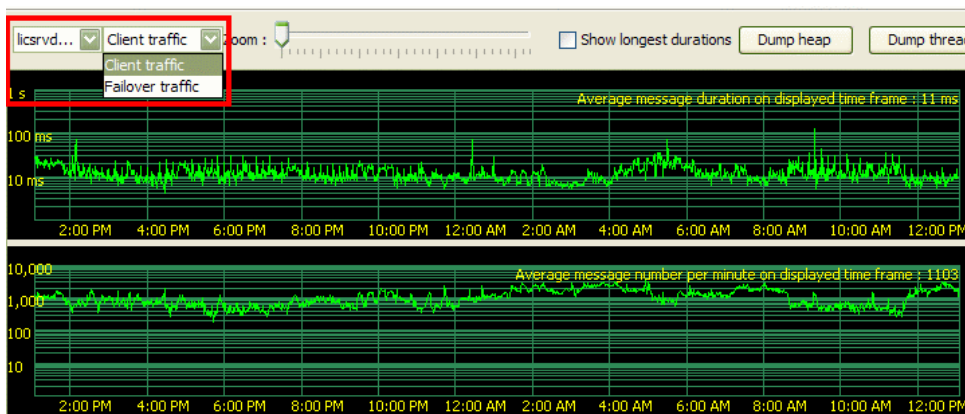
The following modes are available in the pulldown menu:

Client traffic/Admin traffic	These perform the same monitoring functions as for a standalone server.
Failover traffic	Because the selected server is configured as a member of a failover cluster:

- the upper part of the display monitors the average duration of processing, by the failover member, of messages sent to the two other members
- the lower part of the display monitors the number of messages per minute sent to the two other members

as illustrated below:
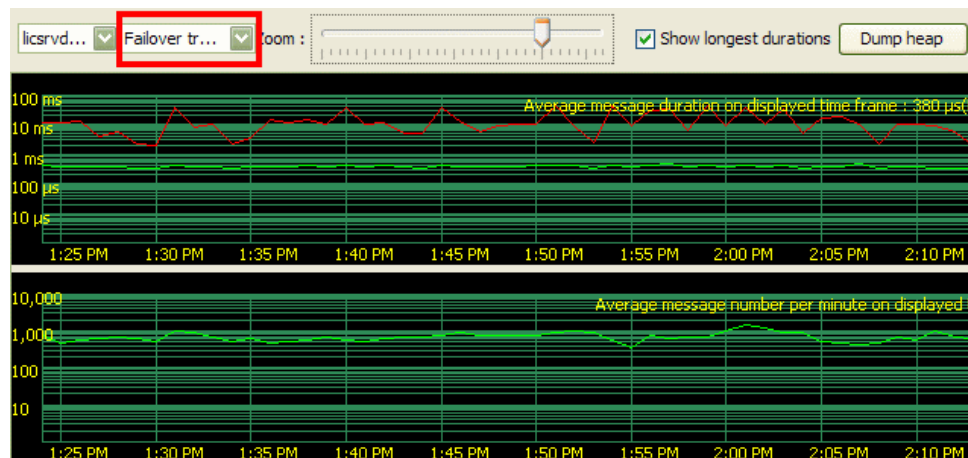
8. In case of suspected server performance problems or if the server hangs, and if requested, you can dump server performance information using the dump buttons:

Dump heap   The server memory is dumped in a file named `HeapDumpxxxxxxxx.hprof` in the same folder as the ordinary server logs.

    ☞ **Note:** On AIX, the file extension is `.phd`.

Dump threads   The state of all threads of the license server is written to a file named `ThreadDumpxxxxxx.txt`. This information could be requested from you in exceptional cases where the server no longer replies to clients (in the case of deadlocks) and no explanation can be found in server machine system reports.

Reference

This section contains reference information about batch commands and file locations.

DSLicSrv Command

The `DSLicSrv` command initializes and starts the license server and its associated administration tool.

Command Location and Syntax

On Windows, the `DSLicSrv` command is located by default in:

```
C:\Program Files\Dassault Systemes\DS License Server\win_b64\code\bin
```

On UNIX, the `DSLicSrv` command is located by default in:

```
/usr/DassaultSystemes/DSLicenseServer/OS/code/bin
```

This is the syntax:

```
DSLicSrv
-initServer -adminPort nnnn [-force][-fromHost host [-password pwd]]
-startServer [-echo] [-logDir path_to_log]
-stopServer
-adminUI [-resetSettings] [-locale en_US]
-admin [-i input_file] [-o output_file] [-t output_file] [-ks
[keystore_file]]
```

Initialize the Server

Option	Description
`-initServer -adminPort nnnn [-force] [-fromHost host [-password pwd]]`	Initializes the license server. • - adminPort nnnn is the administration listening port number • - force: licenses must be re-enrolled (including the activation license) • -fromHost host initializes a license server which is a member of a failover cluster that has gone down and refuses to start, by retrieving configuration data and license keys from one of the remaining working members • -password pwd password of remaining working member, if needed

Example:

```
DSLicSrv -initServer -adminPort 4084
```

👉 **Note:** You must run this command as root on UNIX, and in an elevated command prompt on Windows.

Start the Server

Option	Description
`-startServer [-echo] [-logDir path_to_log]`	Starts the license server: • -echo: displays messages in addition to logging them • -logDir path: specifies a different log directory; if you specify a remote directory, the license server may hang if the remote directory can no longer be accessed.

Example:

```
DSLicSrv -startServer
```

☞ **Note:** You must run this command as root on UNIX, and in an elevated command prompt on Windows.

On Windows, you may prefer to use the following command in an elevated command prompt to start the server as a Windows service:

```
net start "DS License Server"
```

Stop the Server

Option	Description
`-stopServer`	Stops the license server

Example:

```
DSLicSrv -stopServer
```

☞ **Note:** You must run this command as root on UNIX, and in an elevated command prompt on Windows.

Start the License Administration Tool GUI

Option	Description
`-adminUI [-resetSettings] [-locale en_US]`	Starts the License Administration Tool GUI: • -resetSettings: resets License Administration Tool GUI settings • -locale en_US: forces the License Administration Tool to be displayed in English.

Example

```
DSLicSrv -adminUI
```

starts the License Administration Tool user interface.

Start the License Administration Tool in Command Line Mode

The majority of the tasks explained in this guide involve the use of the GUI version of the **License Administration Tool**. However, you can perform the same tasks in command line mode.

Option	Description
`-admin [-i input_file] [-o output_file] [-t output_file] [-run "list of commands"] [-ks [keystore_file]`	Starts the License Administration Tool in command line mode • -i input_file: input file containing list of commands • -o output_file: redirects output to an output file • -t output_file: redirects output both to an output file and to the command line window For more information, see *Redirecting Output*. • -run "list of commands: runs a concatenated list of commands, as explained in *Running Several Commands at the Same Time* • -ks keystore_file: creates or uses an existing encrypted password file, as explained in *Managing Passwords*.

The following command prompt appears:

```
License Administration Tool Version 6.216.0 Built on Oct 23, 2013 5:23:25
PM
admin >
```

As you can see, when the prompt is:

```
admin >
```

you are inside the command line administration tool.

You have to connect to a license server after having launched the command line administration tool.

To list the commands available, enter one of the following commands:

```
admin > ?
```

```
admin > help
```

Most commands have both a long and abbreviated format, as indicated by the "|" separator which means "or", for example: `getConfig|gc`. Running either the `getConfig` or `gc` command displays the same result.

To get help about a specific command, use the `help|h` command, for example:

```
help getConfig
```

```
help gc
```

Here is the list of available commands:

Operation	Command Syntax	Options
Connect to a license server	`connect|c server port [ -proxy | -p proxyHost proxyPort] [-restricted | -r]`	server: license server host name port: administration port number -proxy|-p proxyHost proxyPort: proxy host name and proxy port number -restricted|-r: forces connection in restricted mode (replaces -readOnly which remains valid for backward compatibility reasons)
Get current license server info	`getServerInfo|gsi`	
Disconnect from connected license server	`disconnect|disc|d`	

Operation	Command Syntax	Options
Get license server configuration	`getConfig|gc`	
Get license information	`getLicenseInfo|gli`	
Retrieve license data (save license keys in a directory)	`getLicenseData|gld [-editorID editor] [-release release] [-licenseID license] [-groupIndex index] [-fileIndex index] -out directory`	-editorID: editor identifier -release: release number -licenseID: license identifier -groupIndex: replacement group number -fileIndex: replacement file index -out: output directory
Show current license usage	`getLicenseUsage|glu [-feature feat] [-all|-short]`	-feature: display usage on specified feature -all: display detailed client usage (including casual license usage in minutes, last used date for automatic recycling purposes, etc.) and running processes -short: display global usage only
Get license usage tracing flags	`getLicenseUsageTraces|dut`	
Activate/Deactivate license usage trace	`setLicenseUsageTraces|sut all|license1 license2 ... -trace|-t yes|no [-editorId|-e editor]`	license1 license2 ...: licenses to manage usage tracing, or all to manage all licenses -trace yes|no: to activate or deactivate trace -editorID: editor
Display logged server messages	`showLog|sl [-from fromDate] [-to toDate]`	-from: lower limit (default midnight) -to: upper limit (default now) Date format: `YYYY/MM/DD [HH:MM:SS]`
Modify server configuration	`setConfig|sc [-licensingPort|-lp port] [-adminPort|-ap port] [-failoverPort|-fp port] [-password|-pwd] [-restrictedPassword|-rpwd] [-remoteAdmin|-ra none|restricted|full] [-failoverMode|-fm yes|no] [-clusterName1|-cn1 name] [-clusterName2|-cn2 name] [-clusterName3|-cn3 name] [-enableLicenseStats|-els yes|no] [-automaticRecycling|-ar yes|no] [-enableOffline|-eo yes|no]`	-licensingPort: listening port for license client access -adminPort: listening port for administration usage -failoverPort: listening port for intra cluster communications -password: ask to be prompted to enable/disable password protection administration -restrictedPassword: ask to be prompted to enable/disable restricted mode password protection administration -remoteAdmin: disable administration from a remote machine or enable in full or restricted mode

Operation	Command Syntax	Options
		-failoverMode: change standalone/failover mode
		-clusterName1: host name of the first machine of the failover configuration
		-clusterName2: host name of the second machine of the failover configuration
		-clusterName3: host name of the third machine of the failover configuration
		-enableLicenseStats: activates statistics
		-automaticRecycling: activates automatic license recycling.
		-enableOffline: enable offline license extraction.
Modify cluster	`modifyCluster|mc [-repair|-r host] [-update|-u host] [-changeName|-cn host newHost] [-changeMachine|-cm host newHost]`	-repair: repair server when license database is corrupted -update: update cluster when host computer id has changed -changeName: modify cluster when a host name has changed, computer id still the same -changeMachine: modify cluster when a machine has been replaced (computer id no longer available)
Enroll licence files	`enrollLicense|e -dir inputDir -file file1 file2...`	-dir: input directory -file: input files or regular expression
Erase licence data	`deleteLicense|dl -licenseID uid [-group index]`	-licenseID: license identifier -group: replacement group number
Delete expired licenses	`deleteExpiredLicenses|dxl`	
Create group of users to manage authorization lists	`createUserGroup|cug groupName -users user1 user2 ... [-replace]`	-users: list of users contained in that group -replace: replace existing group of users if any
Create group of hosts to manage authorization lists	`createHostGroup|chg groupName -hosts host1 host2 ... [-replace]`	-hosts: list of hosts contained in that group -replace: replace existing group of hosts if any
Create an authorization list	`createAuthorizationList|cal name -type t -editorId id -product prd [-model ConcurrentUser|Token|NamedUser] [-licenseId id] [-users user1[,number] ...] [-hosts host1[,number] ...] [-ipranges ipr1[,number] ...]`	-type: type of authorization list (ALLOW|DENY|RESERVE|LIMIT) -editorId: unique editor identifier -product: feature name to manage -model: ConcurrentUser|Token|NamedUser -licenseId: licenseID number (optional)

Operation	Command Syntax	Options
	`[-iprangegroups iprgrp1[,number] ...] [-usergroups usrgrp1[,number] ...] [-hostgroups hostgrp1[,number] ...] [-replace]`	-users: list of individual users with optional number of licenses -hosts: list of individual hosts with optional number of licenses -ipranges: list of IPRanges with optional number of licenses -iprangegroups: list of groups of IPRanges with optional number of licenses -usergroups: list of groups of users with optional number of licenses -hostgroups: list of groups of hosts with optional number of licenses -replace: replace existing list if any
Create offline extraction restrictions	`createOfflineRestrictions|cor -name -editorId id -product prd -model m [-licenseId id] [-keyword kw] [-maxDuration n] [-replace]`	-editorId: editor unique identifier -product: product name to manage -model: model of product to manage (NamedUser|ConcurrentUser|Token) -licenseId: license product number -keyword: keyword to be provided to extract offline -maxDuration: maximum duration of extraction validity, between 0 and 30 days -replace: replace existing restriction name if any At least option -keyword or -maxDuration must be passed.
Delete user	`deleteUser|du userName`	
Delete host	`deleteHost|dh hostName`	
Delete group of users	`deleteUserGroup|dug groupName`	
Delete group of hosts	`deleteHostGroup|dhg groupName`	
Delete an authorization list	`deleteAuthorizationList|dal listname`	listname: name of list
Delete offline restrictions	`deleteOfflineRestrictions|dor listname`	listname: name of list
List users	`listUsers|lu`	
List hosts	`listHosts|lh`	
List groups of users	`listUserGroups|lug`	
List groups of hosts	`listHostGroups|lhg`	

Operation	Command Syntax	Options
Rename user group	`renameUserGroupName|rug currentName newName`	
Rename host group	`renameHostGroupName|rhg currentName newName`	
Rename authorization list	`renameAuthorizationList|ral currentName newName`	
Rename offline restrictions	`renameOfflineRestrictions|ror currentListName newListName`	
List all authorization lists	`listAuthorizationLists|lal`	
List all offline restrictions	`listOfflineRestrictions|lor`	
Create IP range	`createIPRange|cipr name -ip iprange [-replace]`	-ip: internet address range, (firstIP-lastIP or CIDR notation) -replace: replace existing item if any Examples: • `cipr local1921680 -ip 192.168.0.1/24 -replace` • `cipr localcomputer -ip 127.0.0.1/32 -replace` • `cipr local10232 -ip 10.232.0.0–10.232.255.255 -replace` • `cipr localipv6 -ip fd00::/10 -replace`
Create IP range group	`createIPRangeGroup|ciprg name -ip iprange1 iprange2 ... [-replace]`	-ip: IPRanges -replace: replace existing item if any Example: `ciprg localgroup -ip localcomputer local1921680 local10232 localipv6 -replace`
List all IPRanges	`listIPRange|lipr`	
List all IPRange groups	`listIPRangeGroup|liprg`	
Rename IPRange	`renameIPRange|ripr currentName newName`	
Rename IPRange group	`renameIPRangeGroup|riprg currentName newName`	
Delete IPRange	`deleteIPRange|dipr name`	

Operation	Command Syntax	Options
Delete IPRange group	`deleteIPRange|diprg name`	
Export authorizations to file in XML format	`exportAuthorizations|ea -o file`	-o file: path of XML file to generate
Import authorizations from file in XML format	`importAuthorizations|ia -f file`	-f file: path of XML file to read Note that all differences are automatically accepted: existing data is removed and the new data is added.
Monitor licence server	`monitor|mon [-dumpHeap|-dh] [-dumpThreads|-dt] [-outDir|-o dir]`	-dumpHeap|-dh: obtain server heap dump -dumpThreads|-dt: obtain server threads status -outDir|-o dir: directory storing result of command (mandatory for `-dumpHeap` option)
Display mail configuration	`getMailConfig|gmc`	
Set mail configuration	`setMailConfig|smc [-test|-t] [-smtp servername] [-to email1,email2,...] [-activate|-a event yes|no] [-parameter|-p event param value] [-subject|-s event "..."] [-body|-b event "..."] [-mailBodyFooter|-footer "..."]`	-test|-t: test mail configuration -smtp servername: SMTP server name -to email1,email2,...: names of recipients separated by comma (,) -activate|-a event yes|no: activate or deactivate the event, where `event` can be: • `OnServerStart`: when server starts • `OnServerStop`: when server stops • `OnLicenseSoonExpiring`: when licenses expire, with parameter `Threshold` in range from 1 - 30 • `OnMemberIsolated`: with parameter `Threshold` in range from 1 - 60 -parameter|-p event param value: value of the event parameter -subject|-s event "...": subject of the mail for the event -body|-b event "...": set the body header of the mail for the event -mailBodyFooter|-footer "...": body footer of all mails. For example, to send mail notifications 25 days before license expiration, run the command: `smc -activate OnLicenseSoonExpiring yes -parameter OnLicenseSoonExpiring Threshold 25`
Stop licence server	`stopServer|ss`	

Operation	Command Syntax	Options
Exit the license administration tool	`quit|q|exit|x|bye`	
Display help information	`help|h|? [command]`	command: (optional) display help information relative to this command

Redirecting Output

By default, the `DSLicSrv -admin` command does not redirect output. The following table sums up the different redirection possibilities available:

To perform this operation...	Run this command...
Start the License Administration Tool in command line mode and direct output to a newly created output file only	`DSLicSrv -admin -o outputfile` or `DSLicSrv -admin > outputfile` where `outputfile` is the name of the output file.
Start the License Administration Tool in command line mode and append output to an existing output file only	`DSLicSrv -admin >> outputfile` where `outputfile` is the name of the output file.
Start the License Administration Tool in command line mode and redirect output both to an output file and to the command line window	`DSLicSrv -admin -t outputfile` where `outputfile` is the name of the output file.
After starting the License Administration Tool in command line mode, redirect output from individual commands to a newly created output file	Use the `>` sign to redirect command output, for example: `glu -admin > outputfile` where `outputfile` is the name of the output file. These new redirections take precedence over previous global redirections.
After starting the License Administration Tool in command line mode, redirect output from individual commands to an existing output file	Use the `>>` sign to redirect command output, for example: `glu -admin >> outputfile` where `outputfile` is the name of the output file. These new redirections take precedence over previous global redirections.

Here is a more elaborate example of how to use the different redirection possibilities:

```
---DSLicSrv -admin
License Administration Tool Version 6.216.0 Built on May 10, 2013 11:52:00 AM.
admin >connect localhost 4084
        Software version: 6.216.0
        Build date: May 10, 2013 11:52:00 AM
        Standalone mode
        Ready: yes
        Server name: comp5dsy   Server id: ABC-43EE21EF02891F94
admin >getConfig
    Server configuration
        Standalone mode
        Computer name:              comp5dsy   Computer ID:    ABC-43EE21EF02891F94
        Licensing port:             4085       Administration port:          4084
        Password protected:         no         Remote administration:    restricted
        Automatic recycling enabled: no        License usage statistics enabled: no
admin >getLicenseUsage >> C:\temp\usage.txt
admin >getLicenseInfo > C:\temp\info.txt
admin >getServerInfo
        Software version: 6.216.0
        Build date: May 10, 2013 11:52:00 AM
        Standalone mode
        Ready: yes
        Server name: comp5dsy   Server id: ABC-43EE21EF02891F94
```

Output from the commands highlighted in yellow is not redirected.

Output from the command highlighted in blue is appended to the existing file `C:\temp\usage.txt`.

Output from the pink command is redirected to the newly created file `C:\temp\info.txt`.

Managing Passwords

You may not want to enter passwords each time you run `DSLicSrv -admin`, particularly if full and restricted passwords are set, or if passwords are different between license servers. Furthermore, writing passwords in batch files is not secure.

You can store passwords in an encrypted file and reference this file when connecting to license servers. Adding the option `-keyStore [file.ks]` (or `-ks [file.ks]`) instructs the **License Administration Tool** to work with the encrypted file containing the passwords.

The default pathname of the `.ks` file is:

- `C:\Users\userid\AppData\Roaming\DassaultSystemes\LicenseAdmin.ks` (Windows)
- `$HOME\.LicenseAdmin.ks` (UNIX).

but any pathname can be used.

The `.ks` file is encrypted with the OS username and the pathname in lowercase. This partially prevents different users from using the same `.ks` file, or from moving a `.ks` file from one folder to another.

The `.ks` file can contain full and restricted passwords for several license servers. When the `-keyStore` option is used and the `.ks` file does not exist or does not contain the valid password for the license server, you will be prompted to enter a password. If you enter the correct password, it will be stored in the `.ks` file.

When the `-keyStore` option is used and the `.ks` file contains a valid password for the license server, no password prompt is displayed and the access will be granted.

License servers are identified by their names in a `.ks` file. Consequently, connecting a license server with an IP address whereas the name has been stored in the `.ks` file will lead to a password prompt. The behavior is the same if a license server is accessed both via `localhost` and its name, for example.

At the beginning of the following example, the `-keyStore` option has not been used already, therefore a `.ks` file does not already exist, and you are trying to connect to a password-protected license server:

```
---DSLicSrv -admin -keyStore
License Administration Tool Version 6.216.0 Built on May 10, 2013 11:52:00 AM.
admin >connect localhost 4084
Enter password >
        Software version: 6.216.0
        Build date: May 10, 2013 11:52:00 AM
        Standalone mode
        Ready: yes
        Server name: comp5dsy    Server id: ABC-43EE21EF02891F94
admin >quit

---DSLicSrv -admin -keyStore
License Administration Tool Version 6.216.0 Built on May 10, 2013 11:52:00 AM.
admin >connect localhost 4084
        Software version: 6.216.0
        Build date: May 10, 2013 11:52:00 AM
        Standalone mode
        Ready: yes
        Server name: comp5dsy    Server id: ABC-43EE21EF02891F94
admin >quit

---DSLicSrv -admin
License Administration Tool Version 6.216.0 Built on May 10, 2013 11:52:00 AM.
admin >connect localhost 4084
Enter password >
        Software version: 6.216.0
        Build date: May 10, 2013 11:52:00 AM
        Standalone mode
        Ready: yes
        Server name: comp5dsy    Server id: ABC-43EE21EF02891F94
admin >quit
```

In the case of the command highlighted in yellow, you are prompted to enter a password because there is no existing `.ks` file yet, so it will be created once you enter the password.

In the case of the command highlighted in blue, you are NOT prompted to enter a password because it can be found in the `.ks` file which has just been created in the previous step.

In the case of the command highlighted in pink, you are prompted to enter a password because you started the **License Administration Tool** without the `-keyStore` option.

Running Several Commands at the Same Time

You can run several commands at a time:

- using a batch file as input file containing the commands: in the input file, several commands can be entered as if they were entered interactively
- or by concatenating the commands from the command line, eliminating the need for a batch file.

This is done using the `-run "list of commands"` option. Each command in the list of commands is separated by a semicolon `;`. The first command in the list must be the `connect` command (or `help` command). Note that `disconnect` and `quit` commands are not mandatory at the end of the list.

If the server is protected by a full or restricted password, the password can be either entered interactively or using a `.ks` file. You cannot enter the password in the list of commands after the `-run` option.

Only one `-run` option can be passed.

The following table illustrates how to use both methods.

To perform this operation...	Run this command...
Start the License Administration Tool in command line mode and execute a command parameter file	`DSLicSrv -admin -i input file` The input file contains commands executed in command line mode.

Start the License Administration Tool in command line mode and run a list of commands	`DSLicSrv -admin -run "list of commands"`
	
	Examples:
	
	`DSLicSrv -admin -run "c localhost 4084; glu"`
	
	displays license usage.
	
	`DSLicSrv -admin -run "c localhost 4084; gc; gli > C:\temp\gli.txt;`
	`glu >> C:\temp\glu.txt"`
	
	displays the license server configuration, redirects the license information to a new file, then appends license usage information to an existing file.
	
	`DSLicSrv -admin -run "c protcomp 4084 -r;`
	`glu -all" -ks`
	
	displays the detailed license usage of a password-protected license server accessed in restricted mode.

DSLicTarget Command Syntax

The `DSLicTarget` command returns the computer id.

Option	Description
-t	Display the computer id
-l	List available network adapters
-c	Clear Windows registry key. You must run this command in an elevated command prompt.
-s {...}	Windows only. Use a specific device identifier (provided by the `-l` parameter) to generate the computer id, for example: `DSLicTarget -s {558CBA02-9E12-33F7-49A9-1154BED416A6}` You must run this command in an elevated command prompt.
-h	Display help

File Locations, Settings and Registry Entries

This section specifies where the different files, settings and registry entries are created when you install and administer the DS License Server.

Entries marked (*) indicate items that are intentionally left in place after uninstallation.

File Type	Location

License Repository (*)	The license repository containing enrolled licenses is located in:
	
	On Windows:
	
	`C:\ProgramData\DassaultSystemes\LicenseServer\Repository`
	
	On UNIX:
	
	`/var/DassaultSystemes/LicenseServer/Repository`
	
	: Warning: THIS FOLDER AND THE FILES INCLUDED IN IT MUST NOT BE CHANGED NOR EVEN MOVED, RENAMED NOR ACCESS RIGHTS MODIFIED WHEN THE DS LICENSE SERVER IS RUNNING. CERTAIN BACKUP SOFTWARE PRODUCTS PERFORM SUCH FORBIDDEN CHANGES. CONFIGURE YOUR BACKUP SOFTWARE TO NOT BACKUP THIS FOLDER. IF YOU WISH TO BACKUP YOUR LICENSE KEYS, YOU CAN EITHER SAVE THE LICENSE KEYS YOU RECEIVED (.LIC OR .LICZ FILES), OR YOU CAN USE THE LICENSE > SAVE COMMAND IN THE LICENSE ADMINISTRATION TOOL. IF THIS RULE IS NOT FOLLOWED, THE NEED FOR REFRESHED LICENSE KEYS AND FOR RE-ENROLLING THE LICENSE KEYS WILL BE MANDATORY. THE BEST WAY TO AVOID THIS INCONVENIENCE IS TO STOP THE DS LICENSE SERVER FOR ONLY THE FEW MINUTES NECESSARY TO UPGRADE IT.

Log Files (*)	On Windows, an installation log file is created in:
	
	`%TEMP%\DSLSmsi.log`
	
	This file is not created if the installation was performed by double-clicking the `.msi` file.
	
	Furthermore, server statistics files (if enabled) and log files are stored by default in:
	
	On Windows:
	
	`C:\ProgramData\DassaultSystemes\LicenseServer\LogFiles`
	
	On UNIX:
	
	`/var/DassaultSystemes/LicenseServer/LogFiles`
	
	A new log file is created each time the license server is started, and also once the size of the active log file exceeds 1MB. Old files can be freely removed or archived.

Casual usage named user license monthly report (*)	On Windows:
	
	`C:\ProgramData\DassaultSystemes\LicenseServer\LogFiles`
	
	On UNIX:
	
	`/var/DassaultSystemes/LicenseServer/LogFiles`
	
	Its name is `CasualUsage.YearMonth.txt` and it contains the following information in plain text:
	
	• Generation date
	• License server name
	• License server computerID
	• List of CustomerSite value(s) present in the license keys
	• List of overuses (if any) comprising lines with:
	
	  - Product name
	  - User name
	  - Measured usage duration

File Type	Location
	- Max allowed usage duration - LicenseID • Signature.

Settings (*)	The License Administration Tool user interface settings file (`LicenseAdminUI`) is located in:
	On Windows:
	`C:\Users\userid\AppData\Roaming\DassaultSystemes`
	On UNIX:
	`$HOME`

Password keystore (*)	On Windows:
	`C:\Users\userid\AppData\Roaming\DassaultSystemes\LicenseAdmin.ks`
	On UNIX:
	`$HOME/.LicenseAdmin.ks`

License Client Configuration (*)	Enrolled offline licenses and the licensing client configuration file (`DSLicSrv.txt`) are located in:
	Windows 7 and Windows Server 2008 R2:
	`C:\ProgramData\DassaultSystemes\Licenses`
	On UNIX:
	`/var/DassaultSystemes/Licenses`
	
	☞ **Note:** You can change the default value for the path of the client configuration file by setting the environment variable DSLS_CONFIG to the full pathname of the file, for example on Windows:
	`set DSLS_CONFIG=C:\SpecialProject\DSLicSrv.txt`

Windows Registry Entries	Standard Windows entries for managing the DSLS service. Standard Windows entries for managing the DSLS installation. The key: `HKEY_LOCAL_MACHINE\SOFTWARE\Dassault Systemes\Admin (*)` manages ComputerID related info.
Windows Shortcuts	**Start** > **Programs** > **DS License Server**

UNIX system files	The following system files are modified if you do not perform the installation using the -x option.
	On AIX:
	`The file /etc/inittab is updated`
	On Sun:
	`The file /etc/init.d/dsls is created`
	`The symbolic link /etc/rc2.d/S98dsls is created`
	`The symbolic link /etc/rc2.d/K96dsls is created`
	On Red Hat:
	`The file /etc/init.d/dsls is created`
	`The file /etc/sysconfig/dsls is created`

File Type	Location

	`The symbolic link /etc/rc.d/rc0.d/K02dsls is created`
	`The symbolic link /etc/rc.d/rc1.d/K02dsls is created`
	`The symbolic link /etc/rc.d/rc2.d/K02dsls is created`
	`The symbolic link /etc/rc.d/rc3.d/S98dsls is created`
	`The symbolic link /etc/rc.d/rc4.d/K02dsls is created`
	`The symbolic link /etc/rc.d/rc5.d/S98dsls is created`
	`The symbolic link /etc/rc.d/rc6.d/K02dsls is created`
	
	On SuSE:
	
	`The file /etc/init.d/dsls is created`
	`The file /etc/sysconfig/dsls is created`
	`The symbolic link /etc/init.d/rc3.d/Kxxdsls is created`
	`The symbolic link /etc/init.d/rc3.d/Syydsls is created`
	`The symbolic link /etc/init.d/rc5.d/Sxxdsls is created`
	`The symbolic link /etc/init.d/rc5.d/Kyydsls is created`
	
	`(where xx and yy depend on your system configuration)`

Port Management

There are three ports involved when managing the DS License Server:

- Administration port (https protocol): default 4084, used by the `License Administration Tool` to connect to the server
- Licensing Port (https protocol): default 4085, used by license clients to request licenses
- Failover port (https sockets): default 4086, used by intercommunication between cluster members.

☞ **Note:** The https protocol is of the tcp type.

☞ **Note:** The license administration tool and licensing clients can communicate with a license server through a VPN if this VPN is properly configured to support https.

Troubleshooting

This section contains license server troubleshooting information.

Client cannot communicate with server

If this problem occurs:

- On the client, run the `DSCheckLS` tool to get the result of some automatic checks.
- Check that client and server have an absolute time difference lower than one hour (whatever the time zones, which are ignored). A warning message `Incompatible clock setting` can be found in the server log in such a case.
- Check that the `.txt` extension is not duplicated for the `DSLicSrv.txt` file on a Windows client:
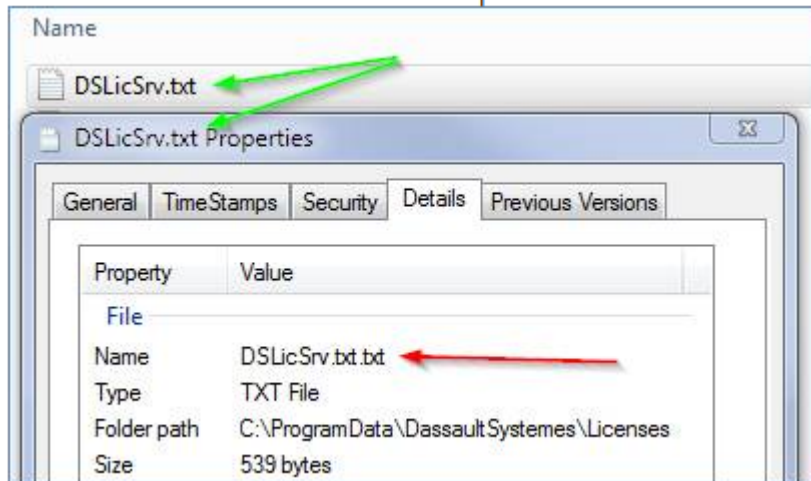
This type of issue can occur when your Windows explorer is configured to `Hide extensions for known file types`.

- Check that the `DSLicSrv.txt` file is at least in read access for everyone on the client.
- Check that the server is declared in the `DSLicSrv.txt` file with a full qualified domain name if your network settings require it.
- Check that the `DSLS_CONFIG` environment variable has not been set on the client, or has been set to an appropriate value.
- Check that the `C:\Windows\System32\drivers\etc\hosts` file on a Windows client, or `/etc/hosts` file on a UNIX client, does not contain a configuration preventing server access.
- Check that the license server version is able to serve the client application version. A simple rule is that the latest server version should be always installed, because it's compatible with all existing client application versions. The latest license server version can be downloaded from here:

  `http://www.3ds.com/support/download-documentation/dassault-systemes-license-server`

- Check that the proxy settings declared in the Windows Internet Options of the Windows client do not prevent server access.
- Check that the client firewall, server firewall, network equipment and security software are properly configured. The TCP (HTTPS) protocol must be allowed from client to server typically on port 4085, or another port number if your server is configured to listen to a non-default port number.

Poor communication performance between a Windows client and any server

The DS License Server communication protocol is based on HTTPS. By default, the license client on Windows uses the Microsoft implementation of this protocol.

By default, the Microsoft implementation of the HTTPS protocol needs to contact Microsoft servers to check SSL certificate revocation. These servers are the same as the ones accessed by Windows Update.

When the Windows client computer cannot access the Microsoft servers, a typical 15s timeout occurs before the communication between the license client and license server takes place.

In this type of case, the server log contains `Duration of message exceeds threshold` messages with the IP address of the client.

There are several workarounds to this issue:

- Either, allow the Windows client to access the Microsoft servers used by Windows Update

- Or, switch from the Microsoft implementation of HTTPS protocol to the OpenSSL implementation. This can be done by setting the following environment variable in the Windows client environment: `DSY_DISABLE_WININET=TRUE`. However a drawback exists when this variable is set: forward proxies (declared in Windows Internet Options) are not taken into account.
- Or, turn off `Automatic Root Certificates Update` on the client. To do so:

  1. Run the `Local Group Policy Editor` on client (if you don't know what Windows group policy is, it's better not to follow this workaround).
  2. Go to Computer Configuration - Administrative Templates - System - Internet Communication Management - Internet Communication Settings.
  3. Set `Turn off Automatic Root Certificates Update` to Enabled.

     WARNING: SETTING THIS PARAMETER TO ENABLED IS A SECURITY RISK IF THE CLIENT COMPUTER IS OR WILL BE CONNECTED TO THE INTERNET

Poor client performance at startup

- Reduce the number of lines declared in the `DSLicSrv.txt` file. All logical servers declared are contacted at startup, not only the first one. This ensures that an already granted license is shared.

Nodelock or extracted offline license cannot be granted to the client application

- Check that the process does not run in remote mode, such as Remote Desktop on Windows or by exporting DISPLAY on UNIX. When running in remote mode, nodelock and offline licenses are not taken into account.
- Check that the process does not run in a virtual machine. When running in a virtual machine, nodelock and offline licenses are not taken into account.

Reducing launch duration

If starting the DS License Server or the **License Administration Tool** takes a long time, check that the number of files in your temporary directory is reasonable (less than 10,000).

Here are typical temporary directories to check:

- `C:\Windows\Temp`
- `%USERPROFILE%\AppData\Local\Temp`
- `/tmp`
- `/var/tmp`

Reducing timeout when a failover member is down

When one of the three members of a DS License Server failover is down, it may occur that logon takes longer than usual. This may be due to an inappropriate configuration of TCP parameters on the UNIX computer hosting the Live Collaboration Server:

- On Linux, check that the `tcp_syn_retries` parameter value is not too high.
- On AIX, check that the `tcp_keepinit` parameter value is not too high.
- On Solaris, check that the `tcp_ip_abort_cinterval` parameter value is not too high.

These parameters are managed at operating system level. This means that all running processes will benefit from the changes and not only the Live Collaboration Server. Decreasing their value will not only reduce the logon time when a DS License Server failover member is down, but also will potentially not leave enough time to

another server for responding. For example, a bad consequence could be that the Live Collaboration Server is no longer able to contact a database server or that a third party application is no longer able to contact another server.

Ask your system administrator and your network administrator before modifying such parameters.

Error, Information and Warning Messages

This section contains a list of error messages classified into different categories.

Message types are identified by a one-letter prefix:

- E (error)
- I (information)
- W (warning)

and are organized into the following categories, each describing a specific area being monitored:

- INITSERVER: server initialization
- STARTSERVER: server startup
- STOPSERVER: server shutdown
- REPOSITORY: license repository management
- RUNTIMEDATA: license server runtime management
- ADMINSERVER: server administration
- ENROLL: license enrollment
- LICENSEDATA: license data management
- MONITORING: server monitoring
- STATISTICS: server statistics
- LICENSESERV: license server
- FAILOVERSRV: failover server management.

Type	Category	Message
I	INITSERVER	Server version 6.211.0 built on `yymmddhhmmss`
I	INITSERVER	Initializing license server on `pathName` args [...]
I	INITSERVER	ComputerId `XXX-XXXXXXXXXXXXXXXX`
I	INITSERVER	Server successfully initialized.
I	INITSERVER	License server already initialized on `pathName`
I	INITSERVER	Use `-force` option for reinitialization.
E	INITSERVER	`-adminPort` option invalid : `pppp`
E	INITSERVER	`-adminPort` option missing
E	INITSERVER	Cannot create `pathName`
E	INITSERVER	Cannot create lock file `fileName`
E	INITSERVER	Cannot initialize repository
E	INITSERVER	Cannot initialize server on `pathName`

Type	Category	Message
E	INITSERVER	Cannot obtain a valid computer ID
E	INITSERVER	Cannot retrieve computer name (...)
E	INITSERVER	Cannot retrieve data from `hostName` on port `pppp`(...)
E	INITSERVER	Cannot retrieve data from `hostName`. Authentication is required
E	INITSERVER	Cannot retrieve data from `hostName`. Remote administration is not allowed
E	INITSERVER	Cannot retrieve data from `hostName`. Unknown host
E	INITSERVER	Existing license data has been created by a license server with a higher level than the one being installed. Either install a higher level license server or install license server from scratch.
E	INITSERVER	Network adapter or motherboard previously used for generating Computer ID is no longer available. Either re-install this piece of hardware or install license server from scratch for changing Computer ID.
E	INITSERVER	Check integrity of license data has failed. License server must be re-installed from scratch.
E	INITSERVER	Data received from `hostName` cannot be used by this computer
E	INITSERVER	File version `ver` cannot be read by current software version `ver`
E	INITSERVER	Invalid computerId; `XXX-XXXXXXXXXXXXXXXX` cannot be used
E	INITSERVER	Invalid folder `pathName`
E	INITSERVER	Invalid port specified `pppp` for option `-adminPort`
E	INITSERVER	Unknown option(s):`-option`
E	INITSERVER	Write time : `yymmddhhmmss`, Change time : `yymmddhhmmss`
I	STARTSERVER	Server version 6.209.0 built on Jan 17, 2010 5:28:47 PM started
I	STARTSERVER	java version "1.6.0_18"
I	STARTSERVER	Java(TM) SE Runtime Environment (build 1.6.0_18-b07)
I	STARTSERVER	Java HotSpot(TM) Client VM (build 16.0-b13, mixed mode)
I	STARTSERVER	ComputerId `XXX-XXXXXXXXXXXXXXXX` (based on device ...)
I	STARTSERVER	Ready : administration port `pppp`, licensing port `pppp`
I	STOPSERVER	Stopping license server...
I	STOPSERVER	License server stopped
E	REPOSITORY	IOException writing file `fileName`
E	REPOSITORY	Invalid repository directory `pathName`
E	REPOSITORY	cannot delete file (`fileName`)
E	REPOSITORY	cannot rename file (`fileName -> fileName`)
I	REPOSITORY	`fileName` written to disk
E	RUNTIMEDATA	Check integrity of license data has failed. License server must be re-installed from scratch.

Type	Category	Message
E	RUNTIMEDATA	Clock has been changed
E	RUNTIMEDATA	Clock has been moved to the future (`nnn ms`)
E	RUNTIMEDATA	Clock has been moved to the past (`nnn ms`)
E	RUNTIMEDATA	Computer ID `XXX-XXXXXXXXXXXXXXXX` no more available.
E	RUNTIMEDATA	ComputerId `XXX-XXXXXXXXXXXXXXXX` is not compatible with the cluster configuration
E	RUNTIMEDATA	ComputerId `XXX-XXXXXXXXXXXXXXXX` is not compatible with the server configuration
E	RUNTIMEDATA	Existing license data has been created by a license server with a higher level than the current one. Either install a higher level license server or install license server from scratch.
E	RUNTIMEDATA	File version `ver` cannot be read by current software version `ver`
E	RUNTIMEDATA	License data cannot be read: invalid format. License server must be re-installed from scratch.
E	RUNTIMEDATA	Network adapter or motherboard previously used for generating Computer ID is no longer available. Either re-install this piece of hardware or install license server from scratch for changing Computer ID.
E	RUNTIMEDATA	Serialization error on runtime data
E	RUNTIMEDATA	Write time : `yymmddhhmmss`, Change time : `yymmddhhmmss`
E	RUNTIMEDATA	`writeRuntime` error :...
E	RUNTIMEDATA	`XXX-XXXXXXXXXXXXXXXX` cannot be used
W	RUNTIMEDATA	Error : `AAA` has no runtime
W	RUNTIMEDATA	Error : feature "`AAA`" refers to "`SSSSSSS`" which is not owned by a client
W	RUNTIMEDATA	Error : inconsistent feature `AAA` expected count = `nnn` registered `nnn`
W	RUNTIMEDATA	Error : inconsistent feature `AAA` no license
I	RUNTIMEDATA	System has been suspended
I	RUNTIMEDATA	System has been resumed
W	ADMINSERVER	Administration request denied from `hostName(IP address)` : invalid credentials
W	ADMINSERVER	Connection from `hostName(IP address)` terminated : a local administration console is connecting
W	ADMINSERVER	Remote administration not allowed : refuse connection from `hostName(IP address)`
I	ADMINSERVER	Administration connection ended with `hostName(IP address)`
I	ADMINSERVER	Administration connection started with `hostName(IP address)`
I	ADMINSERVER	Administration port changed to `pppp`
I	ADMINSERVER	Failover port changed to `pppp`
I	ADMINSERVER	Licensing port changed to `pppp`

Type	Category	Message
I	ADMINSERVER	`adminCommand` command issued
I	ADMINSERVER	License usage trace turned on for AAA
I	ADMINSERVER	License usage trace turned off for AAA
W	ENROLL	Enrollment authorization license has expired for editor Dassault Systemes
W	ENROLL	License XXXXX-XXXXX-XXXXX-XXXXX-XXXXX is not valid
I	ENROLL	Enrollment authorized for editor Dassault Systemes
E	LICENSEDATA	Cryptographic error : `. . .`
E	LICENSEDATA	Error in signature key extraction `. . .`
W	LICENSEDATA	RepGroupIndexnof license id XXXXX-XXXXX-XXXXX-XXXXX-XXXXX has been invalidated
W	LICENSEDATA	incomplete data for license id XXXXX-XXXXX-XXXXX-XXXXX-XXXXX, RepGroupIndex `n` missing RepFileIndex `n`
I	LICENSEDATA	Activating group n for license id XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
I	LICENSEDATA	Adding data for license id XXXXX-XXXXX-XXXXX-XXXXX-XXXXX RepGroupIndex n RepFileIndex n Features AAA Quantity nnn
I	LICENSEDATA	Deactivating group n for license id XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
I	LICENSEDATA	Deleting data for license id XXXXX-XXXXX-XXXXX-XXXXX-XXXXX RepGroupIndex `n`
W	MONITORING	`dumpAllThreads` not available on this platform
W	MONITORING	`dumpHeap` not available on this platform
E	STATISTICS	Exception occurred; license usage no more logged
E	STATISTICS	Exception occurred; license usage not logged
E	STATISTICS	`pathName` specified is invalid; license usage not logged
E	LICENSESERV	Cannot listen on port `pppp`
W	LICENSESERV	Waiting for failover server(s)
W	LICENSESERV	Invalid or expired client token nnnnnnnnnnnnnnnn (from client ...)
W	LICENSESERV	No license for editor XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX (from client ...)
W	LICENSESERV	AAA not granted, host `hostName` not authorized (from client ...)
W	LICENSESERV	AAA not granted, host not authorized (from client ...)
W	LICENSESERV	AAA not granted, internal failover error (from client ...)
W	LICENSESERV	AAA not granted, license already used by user `userName` on host `userName` (from client ...)

Type	Category	Message
W	LICENSESERV	AAA not granted, license used on another host (from client ...)
W	LICENSESERV	AAA not granted, no ConcurrentUser license available (from client ...)
W	LICENSESERV	AAA not granted, no NamedUser license available (from client ...)
W	LICENSESERV	AAA not granted, no NamedUser nor ConcurrentUser license available (from client ...)
W	LICENSESERV	AAA not granted, no license enrolled (from client ...)
W	LICENSESERV	AAA not granted, no license enrolled for tenant `tenantId` (from client ...)
W	LICENSESERV	AAA not granted, no license for editor `XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX` (from client ...)
W	LICENSESERV	AAA not granted, no license of type `TYPE` can be granted (from client ...)
W	LICENSESERV	AAA not granted, no more available license (from client ...)
W	LICENSESERV	AAA not granted, no suitable release date `yymmddhhmmss` (from client ...)
W	LICENSESERV	AAA not granted, no suitable release number `n` (from client ...)
W	LICENSESERV	AAA not granted, user `userName` not authorized (from client ...)
W	LICENSESERV	AAA queued request suppressed , no more available license (from client ...)
I	LICENSESERV	Editor `editorName` not registered
I	LICENSESERV	Invalid or expired session `nnnnnnnnnnnnnnnn`
I	LICENSESERV	Licensing service started
I	LICENSESERV	AAA granted to client ...
I	LICENSESERV	AAA detached from client ...
I	LICENSESERV	AAA detached by timeout from client ...
I	LICENSESERV	n tokens of AAA granted to client ...
I	LICENSESERV	n tokens of AAA detached from client ...
I	LICENSESERV	n tokens of AAA detached by timeout from client ...
I	LICENSESERV	AAA granted; offline license XXXXX-XXXXX-XXXXX-XXXXX-XXXXX has been generated for host hostName XXX-XXXXXXXXXXXXXXXX
I	LICENSESERV	AAA detached; offline license XXXXX-XXXXX-XXXXX-XXXXX-XXXXX restituted (generated for host hostName XXX-XXXXXXXXXXXXXXXX)
I	LICENSESERV	AAA detached; offline license XXXXX-XXXXX-XXXXX-XXXXX-XXXXX expired (generated for host hostName XXX-XXXXXXXXXXXXXXXX)
E	FAILOVERSRV	Cannot listen on port `pppp`
E	FAILOVERSRV	Cannot retrieve member of cluster
W	FAILOVERSRV	Cluster host `hostName` : computer id changed to `XXX-XXXXXXXXXXXXXXXX`
W	FAILOVERSRV	Cluster host `hostName` changed to `hostName`
W	FAILOVERSRV	Cluster host `hostName` repaired
W	FAILOVERSRV	Cluster host `hostName` replaced with `hostName` (XXX-XXXXXXXXXXXXXXXX)

Type	Category	Message
W	FAILOVERSRV	Connection lost with $hostName$
W	FAILOVERSRV	Unsuccessful handshake with $hostName$
W	FAILOVERSRV	$hostName$ does not run a compatible runtime version (version : nnn, release : n, servicePack : n
W	FAILOVERSRV	$hostName$'s computerId $XXX-XXXXXXXXXXXXXXXX$ does not match expected $XXX-XXXXXXXXXXXXXXXX$
W	FAILOVERSRV	$hostName$ is not synchronized
I	FAILOVERSRV	Connection established with $hostName$