

Distributed Products

License Installation Guide

Release 3.0



COMPUWARE®

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Chapter 1. Getting Started

The *License Installation Guide* provides information and procedures to:

- Obtain a license
- Install permanent concurrent-user licenses
- Perform license maintenance
- Install permanent single-user licenses
- Troubleshoot license installation errors.

In addition, this guide gives an overview of the tasks required to install a license; explains the new trial or demo license feature and the different types of licenses available; helps you decide which type of license to request; and gives definitions to many of the terms used in this guide.

Terminology

CompuLock license	See evaluation license.
Concurrent-user license	This type of licensing allows you to run the product on more than one workstation so that multiple users can access it and is installed on a machine that acts as a server to any number of machines that are configured to access it.
Daemon	The vendor daemon is used to count (or check licenses in and out) for concurrent-user licenses. If your license contains server and daemon lines without a # sign in front of them, it is a concurrent-user license that is to be installed on a machine dedicated as the server. Literally, daemon is an acronym ‘Disk And Execution MONitor’. It is a program that is not invoked explicitly, but lies dormant waiting for some condition(s) to occur. The idea is that the perpetrator of the condition

	need not be aware that a daemon is lurking (though often a program will commit an action only because it knows that it will implicitly invoke a daemon).
Default time-limited trial license	See evaluation license.
Evaluation license	This type of licensing is installed when you install your Compuware product and it allows you to run the product for a specific time period (typically 30 days from the day you install the product).
Extended trial license	See temporary license.
FLEXlm license server	This is one of the most popular license managers used in the software industry today. It is best known for its ability to allow software licenses to be available (or float) anywhere on a network, instead of being tied to specific machines. This GLOBEtrouter Software product keeps track of how many licenses are checked out and by whom.
Floating license	See concurrent-user license.
Host name	A unique name that identifies a computer on a network. A single computer can have several host names, also called aliases.
Host ID	The machine identification number of a host. For Windows PCs, this would be the Ethernet address of the network interface card.
LAU	See License Administration Utility.
License Administration Utility	This is an application designed to help you set up and manage your license files and set your environment. By using this utility, you do not have to manually type in information or open the license file in a text editor and risk corrupting your file or typing the information incorrectly. You can view details of a product license and get hints to solve many of your licensing errors.
License Manager	Compuware's License Manager contains the FLEXlm license server component and the License Administration Utility. Both of these components enable the License Manager to

	check licenses in and out and maintain the master license file.
License Manager server	The dedicated machine upon which you will install the Compuware License Manager.
LM	See License Manager.
Master license file	This is the repository for the licensing information for all the products you have installed on your machine. When you get a new product license, you will append that information to the master license file using the License Administration Utility.
Network license	See concurrent-user license.
Node-locked license	See single-user license.
Permanent license	This type of license gives you access to the product under the terms of your contract with Compuware. Compuware offers two types of permanent licenses: single-user and concurrent-user.
Product license file	This is the license file that you received via e-mail from Compuware License Management. You should save this file to a temporary directory on your computer and make a note of it for future reference.
Rolling trial license	See evaluation license.
Server	On a local area network, a computer running administrative software that controls access to the network and its resources, in this case the product licenses, and provides resources to computers functioning as workstations (client machines) on the network.
Single-user license	This type of license allows the product to run on a single, specified workstation (node). The product cannot be used on any other workstation.
Temporary license	This type of license gives you an opportunity to extend your trial use of the product once the evaluation license expires (typically 30 days from the day you install the product). It gives an unlimited number of users access to the product for a limited time period.

Task Overview

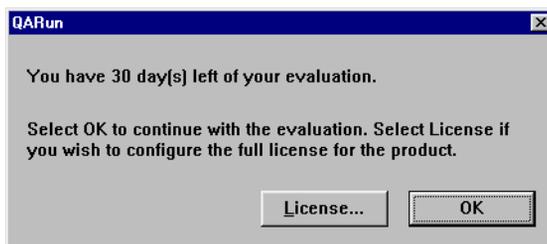
The following are brief guidelines for installing a license with cross references to locations containing more detail:

1. Determine what type of license you need.
See “Choosing Your License” on page 1-6.
2. Determine the host name and host ID of the machine on which you will be installing your license. See “Determine the Host Name and Host ID” on page 1-7.
3. Send the host IDs and host names to Compuware License Management and get a license file in return. See “Obtain the License” on page 1-8.
4. Determine if you need to install or update the License Manager.
 - If you are installing a temporary (extended trial) license or a permanent single-user (node-locked) license, you do not need to install the License Manager. See “Installing a Single-User License on Windows” on page 2-12 or “Installing a Single-User License on UNIX” on page 3-4 for license installation instructions.
 - If you are installing a permanent concurrent-user (floating or network) license, you need to install the License Manager. If you already have the license but don’t know what type it is, you can open the license sent to you in Notepad or DOS EDIT (or in vi if UNIX) and search for the terms “server” and “daemon.” (Do **not** open the license in any other text editor. If you do, you may corrupt the file even if you don’t save it!) If your license has lines that contain those keywords without a # in front of them, you need to install a License Manager. See “Installing the License Manager and a Concurrent-User License” on page 2-2 for a Windows platform, “Installing the License Manager” on page 3-1 for a UNIX platform, or “Installing the License Manager” on page 4-1 for a Novell platform.
 - If the License Manager is already installed, you may need to update it. To compare the version you have on your server machine with the version on the product CD, see “Before You Begin” on page 2-2 for instructions.
5. Enter the license information.
 - For Windows platforms, see “Installing the License Manager and a Concurrent-User License” on page 2-2, “Concurrent-User License Maintenance” on page 2-9, or “Installing a Single-User License on Windows” on page 2-12.
 - For UNIX platforms, see “Installing a Concurrent-User License” on page 3-2 or “Installing a Single-User License on UNIX” on page 3-4.
 - For Novell platforms, see “Installing a License” on page 4-2.
6. If this is a permanent concurrent-user license, configure each client machine to access the License Manager on the server machine.

- For Windows platforms, see “Configuring Each Client Machine” on page 2-11
 - For UNIX platforms, see “Configuring Each Client Machine” on page 3-3
 - For Novell platforms, see “Configuring Each Client Machine” on page 4-3.
7. If this is a permanent concurrent-user license, set up the License Manager to start automatically at boot time.
- For Windows platforms, see “Running the FLEXlm License Server as a Service” on page 2-6 or “Running the FLEXlm License Server in Console Mode” on page 2-7.
 - For UNIX platforms, see “Configuring the License Manager for Automatic Startup” on page 3-3.
 - For Novell platforms, see “Configuring the License Manager for Automatic Startup” on page 4-7.

Evaluation License

Your *QACenter* product has a built-in trial license that allows you to evaluate the product for a specific time period, typically 30 days from the day of installation. When you start up the product during the trial period, a dialog box informs you how much evaluation time remains.



- If you want to continue evaluating the product without obtaining a license, click **OK**.
- If you have a permanent license that you would like to configure, click **License**. Follow the instructions that pertain to your needs:
 - Chapter 2, “Installing a License on Windows”
 - Chapter 3, “Installing a License on UNIX”
 - Chapter 4, “Installing a License on Novell”.

When the evaluation time period expires, an error dialog box appears:



You must then either install a permanent license in order to run the product or contact your Compuware sales representative to extend your trial period by obtaining a temporary license. If you get a temporary license, you will install it using the same procedures as for a permanent single-user license. See “Choosing Your License” on page 1-6 to help you decide which type of license to obtain.

Choosing Your License

Once your evaluation license expires, you must install a license. If you want to extend your evaluation period by obtaining a *temporary* license, contact your Compuware sales representative. Otherwise you must choose the type of *permanent* license you want.

A permanent license gives you access to the product under the terms of your contract with Compuware. Compuware offers two types of permanent licenses: single-user (node-locked) and concurrent-user (floating or network). The type of license you choose depends upon the specific needs of your site.

- **Single-User** — If you only need one copy of the product on one workstation, a permanent single-user license should meet your needs. This type of license allows the product to run on a single, specified workstation (node). The product cannot be used on any other workstation. This license type is also referred to as a node-locked license.
- **Concurrent-User** — If you need to run the product on more than one workstation so multiple users can access it, a permanent concurrent-user license should best meet your needs. This type of license is installed on a machine that acts as a server to any number of workstations that have access to it. It allows a predetermined number of users on different workstations to use the product at the same time. You can install the product on any number of workstations. Your license determines how many users may access the product at a time. This license type is also referred to as a floating or network license.

If you choose a concurrent-user license, you must install License Manager on a machine that acts as the license server. License Manager is not required to use single-user licenses.

Requesting a Permanent License

You need to provide Compuware License Management with your machine's identifying information.

- To obtain a single-user license, you must provide Compuware with the **host ID** of the machine on which you will run the product.
- To obtain a concurrent-user license, you must provide Compuware with the **host name** and **host ID** of the machine designated as the License Manager server.

Compuware provides you with a permanent license that is customized for your needs. Keep in mind that each product license is individually created to work on a specific machine. The license cannot be transferred to another machine.

Determine the Host Name and Host ID



You must perform this task on the machine where you intend to install the product license, and you must use the License Administration Utility as described. If you use any other method, the information you obtain may be incorrect.

Use the License Administration Utility (LAU) to obtain the **host name** and **host ID** that Compuware License Management needs to create the license.

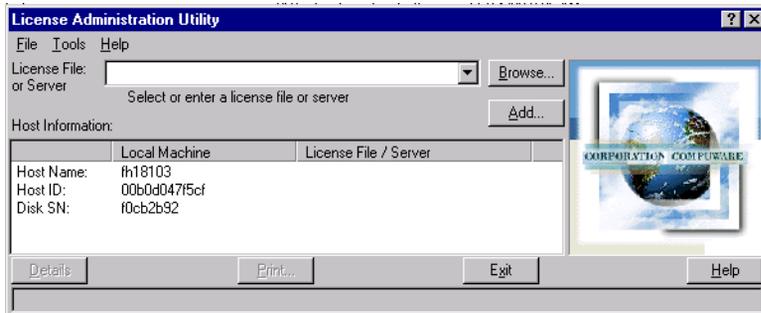
1. Use one of the two methods described below to start the utility.

Starting the Utility After License Manager Has Been Installed

- a. Click the taskbar's **Start** button and choose **Programs>Compuware>License Manager>License Administration Utility**.
- b. Continue with step 2.

Starting the Utility When License Manager Is Not Installed

- a. Insert the CD. The CD browser should automatically appear. If it does not, navigate to the root directory and run the `setup.exe` file.
 - b. Click **Install QACenter Products**.
 - c. Click **Run License Administration Utility**.
 - d. Continue with step 2.
2. When the License Administration Utility dialog box appears, the **Host Information** field displays the host name and host ID for your machine.



3. From the **File** menu, choose **Save**. The Save As dialog box appears.
4. The default filename, `hostinfo.txt`, appears in the **File name** field. From the **Save in** list, select the directory where you want to save the file, then click **Save**.
5. Exit the License Administration Utility.

Obtain the License

To obtain the permanent license, e-mail the file `hostinfo.txt` to Compuware License Management at license_mgt@compuware.com. You can also contact your sales representative. Compuware License Management will send you the permanent license information by e-mail (as a file attachment).

When you receive your license key by e-mail, save the file you receive to a temporary directory. Make a note of this directory so that you can refer to it later when prompted for the product license location. If you want to view your license, open it in Notepad or DOS EDIT (or if UNIX, in vi). If you open it in any other text editor, you may corrupt it even if you don't save it.

Where To Go Next

Depending upon the platform where you will be installing the license, proceed to the appropriate chapter:

- Chapter 2, “Installing a License on Windows”
- Chapter 3, “Installing a License on UNIX”
- Chapter 4, “Installing a License on Novell”.

Chapter 2. Installing a License on Windows

The licensing process varies based on the Compuware product being installed, your agreement with Compuware, and the platform. This chapter includes the following sections:

- **Installing the License Manager and a Concurrent-User License** — Instructions for installing the License Manager on the machine that acts as the FLEXlm license server for concurrent-user licenses. A concurrent-user license should be installed at the same time.
- **Running the FLEXlm License Server as a Service** — Instructions for installing FLEXlm as a service on Windows NT or Windows 2000. This will be necessary only if you did not install a license when you installed the License Manager.
- **Running the FLEXlm License Server in Console Mode** — Instructions for installing FLEXlm as a console application on Windows 95, 98, NT, or 2000. This will be necessary only if you did not install a license when you installed the License Manager.
- **Concurrent-User License Maintenance** — Instructions for adding a new product license to your existing master license file.
- **Configuring Each Client Machine** — Instructions for configuring each client machine that will check out a license from the server machine.
- **Installing a Single-User License on Windows** — Instructions for installing a single-user license on a Windows workstation.
- **Troubleshooting** — A few of the more common problems encountered during the license installation and their possible solutions.

Installing the License Manager and a Concurrent-User License

It is necessary to install the License Manager only if your license has “server” and “daemon” lines (to determine whether it does, open the license in Notepad or DOS EDIT for Windows or vi for UNIX and search for the terms “server” and “daemon” without a # in front of them). This license type is known as concurrent-user licensing.

Concurrent-user licensing allows you to purchase a specific number of licenses without assigning these licenses to particular workstations. Instead, licenses are “checked out” by users on a first-come, first-served basis when they access the product. When all available licenses are issued, no additional users can run the product until another user exits and a license is “checked in.” This request-and-issue process is managed by the License Manager, specifically by the FLEXlm License Server portion of the License Manager. The License Manager must be running on a computer or server that is always available to all client workstations needing access to the product.

Check the prerequisites in “Before You Begin” before proceeding to “Installation Process” for instructions.

Before You Begin

There are a few things you should check before you begin installing the License Manager and a new concurrent-user license:

- Make sure you know the location of your product license file. You received the product license file as an e-mail attachment from Compuware License Management. If you haven’t done so already, save the attached product license file to a temporary directory on your computer. You will need to select the product license file later in this procedure.
- Check to see if License Manager is already running on your machine.
 - If it is not already running on your machine, continue with this procedure.
 - If it is already running on your machine, you may need to update it. To compare the version you have on your server machine with the version on the product CD:
 - Navigate to the directory where License Manager is located on the server machine.

- Type **lmutil lmver lmgrd.exe** and press **Enter**. Find the version number in the resulting message.

lmutil - Copyright (C) 1989-1997 Globetrotter Software, Inc.

FLEXlm Copyright 1988-1996, Globetrotter Software, Inc.

FLEXlm 5.12a (libmgr_s.a), Copyright (C) 1988, 1997 Globetrotter Software Inc.

- Insert the product CD into the CD-ROM drive and open a prompt.
- Type **lmutil lmver lmgrd.exe** and press **Enter**.

If the CD has a newer version of the License Manager, update your License Manager by uninstalling the previous version, rebooting if necessary, and installing from the CD using this procedure.

- If you have the current version of the License Manager and have already set up a master license file directory, do not use this procedure. Go to “Concurrent-User License Maintenance” on page 2-9 for instructions instead.
- Check to see if there is a pre-existing master license file. Check in your system directory for a `\Program Files\Compuware\License\license.dat` file. If you already have this master license file and have already installed the License Manager, do not use this procedure. Instead, see “Concurrent-User License Maintenance” on page 2-9 for instructions on adding a new product license to an existing master license file.
- Check for a file on your system directory called `\flexlm\license.dat`. If this file exists, change the filename to `old_license.dat`. If you do not change the filename, FLEXlm may mistakenly use this license file rather than the correct product license file.

Installation Process

Choose a stable Windows (95, 98, NT, or 2000) machine that is dedicated as the License Manager server. To install the License Manager, follow these steps:



Compuware recommends that you exit all Windows programs before running this setup program. Some Windows programs, such as anti-virus software, may interfere with the installation process.

1. Insert the CD into the CD-ROM drive. The CD browser should automatically display. If it does not, navigate to the root directory and run the `setup.exe` file.
2. Click **Install QACenter Products**.
3. Click **Install License Manager**.

The Welcome dialog box appears.

4. Read the welcome screen and click **Next**. The License Agreement dialog box appears.
5. Read the license agreement and click **Yes** to accept the terms of the agreement. The Customer Information dialog box appears.
6. Type your name and company in the **User Name** and **Company Name** fields. Click **Next**. The Choose Destination Location dialog box appears.
7. Select a location for the License Manager installation.
 - By default, the License Manager installs in the folder `x:\Program Files\Compuware\License Manager` where *x* is the drive where Windows resides on your computer.
 - To specify a different path, click **Browse** and select an existing folder or type the path in the **Path** field.
8. Click **Next**. The Select Program Folder dialog box appears.
9. Specify a location for the License Manager program shortcuts. You may type a new folder name, or select one from the existing folders list. Click **Next**. The Start Copying Files dialog box appears.
10. Review the summary of settings and click **Next** to start copying the program files. The Setup Status dialog box displays the progress of the installation.
11. After all of the files are copied, a dialog box appears asking if you want to install a license. Click **Yes**, the LAU - File Location dialog box appears:



If you are installing the License Manager on Windows NT or 2000, you **must** install a valid license at this time. If you do not, you may have problems running the product that will force you to uninstall and reinstall the License Manager in DOS later. At the very least, the FLEXIm License Server service will not be installed and shortcuts to start and stop the FLEXIm License Server will not be created. The FLEXIm License Server is an integral part of the License Manager and is responsible for the “checking in and out” of the licenses. If you choose to install your license later, you must then set up the service or the shortcuts. See “Running the FLEXIm License Server as a Service” on page 2-6 or “Running the FLEXIm License Server in Console Mode” on page 2-7 for instructions.

12. Type, or browse for, the location of the product license file. This is the file that you received by e-mail from Compuware License Management as a file attachment and saved to a temporary directory.
13. Click **OK**. The LAU - Master File Location dialog box appears:



14. Create the directory where you will place your master license file by typing `x:\Program Files\Compuware\License\license.dat`, where *x* is the directory where your operating system is installed. This file will contain all of the information about the License Manager server and the product licenses that reside there.
15. Click **OK**. The new product information will be copied to this new master license file.
16. Click **OK**. The environment is set to the master license file location. If you are notified that the environment has not been set, simply click **Yes** to set the license environment.
17. After the license is installed, the Setup Complete dialog box appears. Depending on the circumstances, you may receive one of the following prompts:
 - You may be prompted to view the Readme file and register for FrontLine technical support. FrontLine provides fast access to critical information such as documentation, frequently asked questions, and product fixes. The first time you access FrontLine, you are required to register and obtain a password.

Choose whether to review the information in the License Manager Readme file. This file contains information about new features, notes and issues that may enhance or impact the License Manager's performance, and information on how to contact Compuware.
 - You may be prompted to restart your computer. If you are prompted to restart your computer, you may choose to restart it now (recommended) or to restart it later.
18. Click **Finish** to complete the installation of the License Manager.

Running the FLEXlm License Server as a Service

If you did not install a license during installation of the License Manager on Windows NT or Windows 2000, the FLEXlm License Server service was not installed. The FLEXlm License Server is an integral part of the License Manager and is responsible for the “checking in and out” of the licenses. This service is what automatically starts and stops the License Manager whenever you boot up your computer.

This procedure applies to concurrent-user licenses only on Windows NT or 2000. If you are running on Windows NT or 2000, you may choose to run FLEXlm as a service or as a console application. If you do not have full administrator rights to Windows NT or 2000 or if you need to occasionally run diagnostics, see “Running the FLEXlm License Server in Console Mode” on page 2-7 for instructions on running FLEXlm as a console application.



Caution

Do not attempt to run as **both** a service **and** a console application.

If the FLEXlm License Server is started as a service on Windows NT or 2000, it is possible for the license server to be shut down by any user. If this is a concern, it is advisable to start the license server in console-only mode with the option “-2 -p”. (See “Running the FLEXlm License Server in Console Mode” on page 2-7 for instructions.) If this option is employed, then the license server can only be shut down from the Task Manager.

Follow these steps to install the FLEXlm License Server service:

1. Open a Command Prompt window and navigate to the directory where the License Manager is installed.
2. Run **installs -R**. This removes the License Manager if it has been incorrectly installed. Note the output.
3. Run **installs.exe -e <PATH> -c <PATH> -l <PATH>**. Details of the parameters are as follows:

-e <PATH> The fully qualified path to `lmgrd.exe`
 -c <PATH> The fully qualified path to the license file.
 -l <PATH> The fully qualified path to the log file.

If the paths are long filenames, they must be converted to their equivalent short filenames.

Example:

```
installs.exe
-e C:\progra~1\compuw~1\License\lmgrd.exe
-c C:\progra~1\compuw~1\License\license.dat
-l C:\progra~1\compuw~1\License\lmgrd.log
```

4. Continue with the process below that applies to the operating system you are using on your server.

Windows NT

1. Exit the CD if necessary.
2. Click on the taskbar's **Start** button and choose **Settings>Control Panel**.
3. Click the **Services** icon. A list of services appears.
4. Choose the FLEXlm service from the list. The Service dialog box appears.
5. The startup type default is "Automatic." This is the desired startup type.
6. Click **OK** to start up the FLEXlm service.

Windows 2000

1. Exit the CD if necessary.
2. Click on the taskbar's **Start** button and choose **Settings>Control Panel**.
3. Click the **Administrative Tools** icon. Click the **Services** icon. A list of services appears.
4. Choose the FLEXlm service from the list. The FLEXlm Properties dialog box appears.
5. The startup type default is "Automatic." This is the desired startup type.
6. Click **Start** to start up the FLEXlm service.

Running the FLEXlm License Server in Console Mode

If you did not install a license during installation of the License Manager, the FLEXlm License Server application shortcuts were not installed in your computer's Startup folder. The FLEXlm License Server is an integral part of the License Manager and is responsible for the "checking in and out" of the licenses. This application is what automatically starts and stops the License Manager whenever you boot up your computer.

This process applies to concurrent-user licenses for Windows 95, 98, NT, and 2000. You can create shortcuts to start and stop the License Manager as a console application for Windows 95, 98, NT, or 2000. If you do not have full administrator privileges to Windows NT or 2000 or if you want to occasionally run diagnostics on a Windows NT or 2000 machine, you should run FLEXlm as a console application.



Caution

Do not attempt to run as **both** a console application **and** a service.

Follow these steps to create shortcuts for starting and stopping the FLEXlm license server and to place them in your computer's Startup folder:

1. Using Windows Explorer, navigate to the directory where the shortcuts for the License Manager were installed.
2. Create a shortcut named “Start FLEXlm License Server”.

The **Target** location for the shortcut should be:

<Path of lmgrd.exe> -app -c <Path of license file>

- <Path of lmgrd.exe> is the fully qualified path to `lmgrd.exe`. If this path is a long filename, it should be enclosed by quotation marks.
- <Path of license file> is the fully qualified path to the license file. If this path is a long filename, it must be converted to its equivalent short filename.

Example:

```
"C:\Program Files\Compuware\License\lmgrd.exe" -app
-c C:\progra~1\compuw~1\license\license.dat
```

The **Start in** location for the shortcut should be the directory containing `lmgrd.exe`. If this path is a long filename, it should be enclosed by quotation marks.

Example:

```
"C:\Program Files\Compuware\License".
```



Note

If you want the FLEXlm License Server to be started automatically when you start the computer, make a copy of this shortcut and place it in the “Startup” folder.

3. Create a shortcut named “Stop FLEXlm License Server”.

The **Target** location for the shortcut should be:

<Path of lmutil.exe> lmdown -c <Path of license file>

- <Path of lmutil.exe> is the fully qualified path to `lmutil.exe`. If this path is a long filename, it should be enclosed by quotation marks.
- <Path of license file> is the fully qualified path to the license file. If this path is a long filename, it must be converted to its equivalent short filename.

Example:

```
"C:\Program Files\Compuware\License\lmutil.exe" lmdown
-c C:\progra~1\compuw~1\license\license.dat
```

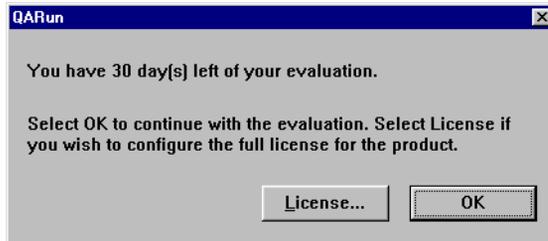
The **Start in** location for the shortcut should be the directory containing `lmutil.exe`. If this path is a long filename, it should be enclosed by quotation marks. Example:

```
"C:\Program Files\Compuware\License".
```

Concurrent-User License Maintenance

Use this procedure only to add a concurrent-user license for a new product when you already have the License Manager installed and the master license file set up. If you have not yet installed the License Manager, see “Installing the License Manager and a Concurrent-User License” on page 2-2 for instructions. This procedure merges a new concurrent-user product license with your master license file on Windows.

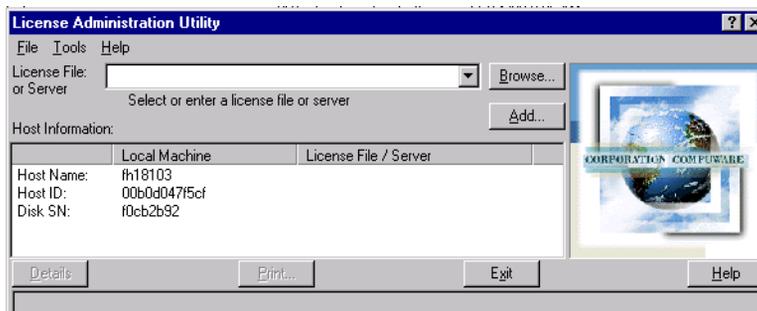
1. Before you begin, make sure you know the location of your product license file. You received the product license file as an e-mail attachment from Compuware License Management. If you haven't done so already, save the attached product license file to a temporary directory on your computer. You will need to select the product license file later in this procedure.
2. Start the License Administration Utility (LAU). You can start the LAU while logging into the product, or you can start the LAU from the program group in the Windows Start menu.
 - **During logon:** When you start a product that has an evaluation license, you are informed of how much evaluation time remains. When you are ready to install a permanent concurrent-user license, click **License**.



The License Administration Utility (LAU) appears.

- **From Windows Start menu:** Click the taskbar's **Start** button and choose **Programs>Compuware>License Manager>License Administration Utility**.

The License Administration Utility (LAU) appears:



3. Type, or choose from the drop-down list, the master license file location in the **License File or Server** field.
4. Click **Add**. The LAU - File Location dialog box appears:



5. Type, or browse for, the location of the product license file. This is the file that you received by e-mail from Compuware License Management as an attachment and saved to a temporary directory.
6. Click **OK**. The LAU - Master File Location dialog box appears:



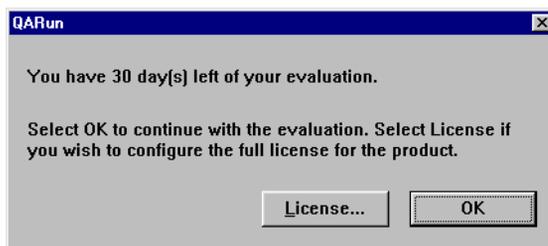
7. This dialog box displays the master license file you selected in step 3. Verify that it is correct and click **OK**. The new product information will be merged with the current master license information.
8. Click **OK**. The environment is set to the master license file location. If you are notified that the environment has not been set, simply click **Yes** to set the license environment.
9. Check the updated master license file, `license.dat`, to ensure that the FEATURE line for the products you just added are in the file as well as all the FEATURE lines of the products that you had previously. Make certain that the valid licenses' FEATURE lines do not have a # in front of them. If you have any questions, call Compuware Technical Support at 1-800-538-7822.

After you merge a new product license to the master license file, the previous version of the master license file will be archived and named `License.nnn` where `nnn` is a number beginning at 001 and is incremented up to 010. These are your license backups or archives.

Configuring Each Client Machine

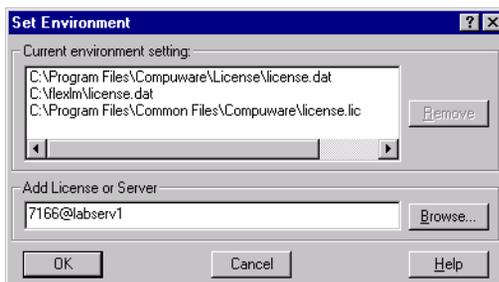
This procedure applies to concurrent-user licenses only. Each client workstation must be configured to access the License Manager.

1. Start the License Administration Utility (LAU). You can start the LAU while logging into the product, or you can start the LAU from the *QACenter* CD.
 - **During logon:** When you start a product that has an evaluation license, you are informed of how much evaluation time remains. When you are ready to install a permanent concurrent-user license, click **License**.



The License Administration Utility (LAU) appears.

- **From the *QACenter* CD:** Insert the *QACenter* CD into the CD-ROM drive. The CD browser should automatically display. If it does not, navigate to the root directory and run the `setup.exe` file. Click **Install QACenter Products**. Click **Run License Administration Utility**. The License Administration Utility appears.
2. From the **Tools** menu on the License Administration Utility main window, choose **Set Environment**. The Set Environment dialog box appears:

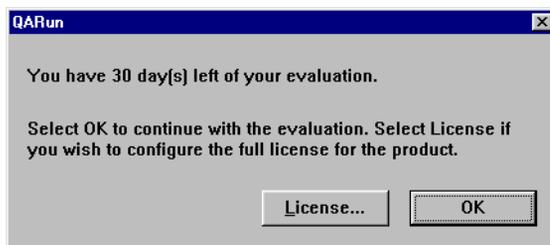


3. Click **Browse** and navigate to the License Manager server location on the Open file dialog box.
4. Click **Open**.
5. Click **OK** to add the file to the current environment setting. Reboot the machine for these changes to take effect.

Installing a Single-User License on Windows

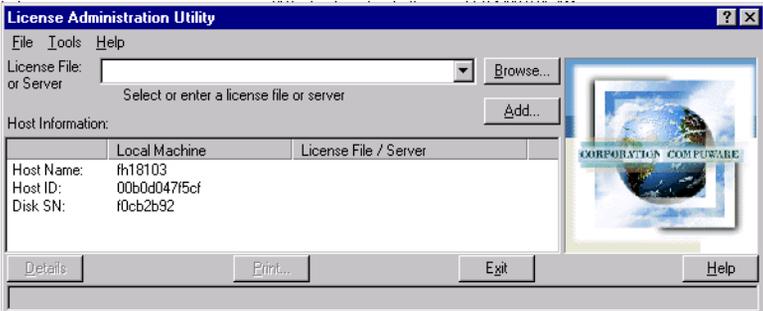
Use this procedure to install a single-user (node-locked) license; this license may be an extended temporary license or a permanent license. You may have received your permanent license when you purchased your product; or you may have requested it after having evaluated the product. In either case, after you receive the permanent license, you need to enter the license information into your master license file.

1. Before you begin, make sure you know the location of your product license file. You received the product license file as an e-mail attachment from Compuware License Management. If you haven't done so already, save the attached product license file to a temporary directory on your computer. You will need to select the product license file later in this procedure.
2. Start the License Administration Utility (LAU). You can start the LAU while logging into the product, or you can start the LAU from the *QACenter* CD.
 - **During logon:** When you start a product that has an evaluation license, you are informed of how much evaluation time remains. When you are ready to install a permanent concurrent-user license, click **License**.



The License Administration Utility (LAU) appears.

- **From the *QACenter* CD:** Insert the *QACenter* CD into the CD-ROM drive. The CD browser should automatically display. If it does not, navigate to the root directory and run the `setup.exe` file. Click **Install QACenter Products**. Click **Run License Administration Utility**. The License Administration Utility appears:



- 3. Type, or browse for, the master license file location in the **License File or Server** field. If you do not already have a master license file defined, type `x:\Program Files\Compuware\License\license.dat` where `x` is the drive where your operating system resides.
- 4. Click **Add**. The LAU - File Location dialog box appears:



- 5. Type, or browse for, the location of the product license file. This is the file that you received by e-mail from Compuware License Management as an attachment and saved to a temporary directory.
- 6. Click **OK**. The LAU - Master File Location dialog box appears:



- 7. This dialog box displays the master license file you selected in step 3. Verify that it is correct and click **OK**. The new product information will be merged with the current master license information.
- 8. Click **OK**. The environment is set to the master license file location. If you are notified that the environment has not been set, click **Yes** to set the license environment.
- 9. Check the new or updated master license file, `license.dat`, to ensure that the FEATURE line for the products you just added are in the file (as well as all the

FEATURE lines of the products that you had previously, if this is an update). Make certain that the valid licenses' FEATURE lines do not have a # in front of them. If you have any questions, call Compuware Technical Support at 1-800-538-7822.

After you merge a new product license with an existing master license file, the previous version of the master license file will be archived and named `License.nnn` where `nnn` is a number beginning at 001 and is incremented up to 010. These are your license backups or archives.

Troubleshooting

This section offers some suggestions for troubleshooting license installation errors. The License Administration Utility online help provides extensive troubleshooting information as well.

The FLEXlm License Server is Not Listed in the Services List

This applies to Windows NT or 2000 only because Windows 95 and 98 do not have services lists.

- If you elected not to install a license when installing the License Manager, the FLEXlm License Server service was not installed either. For instructions on installing the service, see “Running the FLEXlm License Server as a Service” on page 2-6.
- If you decided to run the FLEXlm License Server as a console application, it will not be listed in the services list because you should not run the FLEXlm License Server as **both** a service **and** as a console application.

FLEXlm Cannot Be Started as a Service

The FLEXlm License Server was not installed either as a service or had shortcuts created to run in console mode. See “Running the FLEXlm License Server as a Service” on page 2-6 for instructions on installing the FLEXlm License Server to run as a service on Windows NT or 2000. See “Running the FLEXlm License Server in Console Mode” on page 2-7 for instructions on creating shortcuts to start and stop the FLEXlm License Server in console mode.

The FLEXlm License Server Does Not Start

- If you did not reboot your machine after installation, reboot now.
- Try starting the FLEXlm server by clicking the taskbar's **Start** button and choosing **Programs/Compuware/License Manager**. If the server still does not start, you might receive a descriptive message that will assist you in troubleshooting the problem.

- The license file you specified as the master license file has been moved or is not located in the specified directory. You may not be able to see a file if your folder settings are preventing you from doing so. To verify that your settings are correct, open Windows Explorer and choose **Folder Options** from the **View** menu. Click the **View** tab on the Folder Options dialog box. The Advanced Settings options should have the **Show all files** option selected and the **Hide file extensions for known file types** option cleared.

If that doesn't resolve your problem, refer to the troubleshooting information in the License Administration Utility online help or contact Compuware Technical Support for assistance.

- The license file may contain invalid data. Refer to the troubleshooting information in the License Administration Utility online help or contact Compuware Technical Support for assistance.

FLEXlm License Server Does Not Recognize a New License

If you run the FLEXlm License Server as a service, you must refresh the License Server after adding a new license file. To do this, click the taskbar's **Start** button and choose **Programs>Compuware>License Manager>License Administration Utility**. The License Administration Utility main window appears. Choose **Refresh License Server** from the **Tools** menu.

The Product That Was Just Licensed Won't Run

The FLEXlm License Server was not installed either as a service or had shortcuts created to run in console mode. See "Running the FLEXlm License Server as a Service" on page 2-6 for instructions on installing the FLEXlm License Server to run as a service on Windows NT or 2000. See "Running the FLEXlm License Server in Console Mode" on page 2-7 for instructions on creating shortcuts to start and stop the FLEXlm License Server in console mode.

Chapter 3. Installing a License on UNIX

The licensing process varies based on the Compuware product being installed, your agreement with Compuware, and the platform. This chapter includes the following sections:

- **Installing the License Manager** — Instructions for installing the License Manager on the machine that acts as the FLEXlm server machine for concurrent-user licenses.
- **Installing a Concurrent-User License** — Instructions for installing a concurrent-user license on the server machine.
- **Configuring Each Client Machine** — Instructions for configuring each client workstation that will check out a license from the server machine.
- **Installing a Concurrent-User License** — Instructions for enabling the License Manager to start up automatically whenever the server is rebooted.
- **Configuring the License Manager for Automatic Startup** — Instructions for shutting down the License Manager server machine.
- **Installing a Single-User License on UNIX** — Instructions for installing a single-user license on a UNIX workstation.

Installing the License Manager

It is necessary to install the License Manager only if your license has “server” and “daemon” lines (to determine whether it does, open the license in a text editor and search for the terms “server” and “daemon”). This license type is known as concurrent-user licensing.

Concurrent-user licensing allows you to purchase a specific number of licenses without assigning these licenses to particular workstations. Instead, licenses are “checked out” by users on a first-come, first-served basis when they access the product. When all available licenses are issued, no additional users can run the product until another user exits and a license is “checked in.” This request-and-issue process is managed by the License

Manager, specifically by the FLEXlm License Server service portion of the License Manager. The License Manager must be running on a computer or server that is always available to all client workstations needing access to the product.

Choose a stable UNIX machine that is dedicated as the License Manager Server. To install the License Manager, copy the contents of the platform-specific `/cpwr/cwlm` subdirectory to a directory named `/cpwr/license` on your License Manager server.

Installing a Concurrent-User License

You must have the License Manager installed before you proceed. If you have not yet installed the License Manager, see “Installing the License Manager” on page 3-1 for instructions. The `license.dat` file must be installed on the License Manager server. Follow this procedure to install a permanent concurrent-user license on UNIX.

As an alternative to the steps below, you can use a Windows machine and the License Administration Utility’s **Add** function, then FTP the file to the UNIX machine.

1. Locate (on the License Manager server) the existing `license.dat` file, or use a text editor to create a file name `license.dat` and save it in the directory where the License Manager is located.
2. Paste or type your license string into the license file (don’t include information preceded with #). For example:

```
SERVER ServerName 0020af9adb94 TCP:7166
DAEMON compuware ./compuwar
FEATURE xplus Compuware 4.600 12-jan-1999 10 6C74309CB84A9F07C5ED\
VENDOR_STRING=989898;0;PERM ck=12
```



Caution

The license string is case-sensitive.

3. Save the `license.dat` file.
4. To start the License Manager, from the directory where the License Manager is located, type:

```
lmgrd -c /cpwr/license/license.dat
```

5. To verify installation of the License Manager, type

```
lmutil lmstat -a -c /cpwr/license/license.dat
```

A list of product features from the FEATURE lines appears.

6. Continue with “Configuring Each Client Machine” on page 3-3.

Configuring Each Client Machine

Each client workstation must be configured to access the License Manager.

Set the `LM_LICENSE_FILE` environment variable in the global environment using the appropriate command for your particular shell.

C shell

Use the following:

```
setenv LM_LICENSE_FILE 7166@hostname
```

Bourne shell

Use the following:

```
LM_LICENSE_FILE=7166@hostname  
export LM_LICENSE_FILE
```

Korn shell

Use the following:

```
export LM_LICENSE_FILE=7166@hostname
```

Configuring the License Manager for Automatic Startup

Because all license validation is done by the License Manager, it must be started and kept running in order to use Compuware products. Log on as `root` and complete the appropriate procedure to automatically start the License Manager each time the License Manager server is started.

Sun Solaris

In `/etc/rc2.d`, create a file named `s95cwlms.server` and add the following command to the file:

```
nohup lmgrd -c /cpwr/license/license.dat>>license.log&
```

SunOS

Add the following command to `/etc/rc.local`:

```
nohup lmgrd -c /cpwr/license/license.dat>>license.log&
```

HP-UX

In `/sbin/rc3.d`, create a file named `s95cwlms.server` and add the following command to the file:

```
nohup lmgrd -c /cpwr/license/license.dat>>license.log&
```

AIX

In `etc/rc.local`, enter the following command on one line:

```
nohup /etc/lmgrd -c /cpwr/license/  
license.dat>>license.log2>&1&
```

LINUX

In `/etc/rc.d/rc2.d`, create a file named `s95cwlms.server` and add the following command to the file:

```
nohup lmgrd -c /cpwr/license/license.dat>>license.log&
```

Manually Shutting Down the License Manager Server

On occasion, you may need to manually shut down the License Manager.

Type the following command:

```
/cpwr/license/lmutil lmdown
```

where `/cpwr/license` is the directory where the License Manager is located.

Installing a Single-User License on UNIX

Follow this procedure for installing a permanent single-user license on UNIX. The `license.dat` file must be installed on the workstation.

As an alternative to the steps below, you can use a Windows machine and the License Administration Utility's **Add** function, then FTP the file to the UNIX machine.

1. Locate the existing `license.dat` file, or use a text editor to create a file named `license.dat`.
2. Paste or type your license string into the `license.dat` file (don't include information preceded with #). For example:

```
SERVER ServerName 0020af9adb94 TCP:7166  
DAEMON compuware ./compuwar  
FEATURE xplus Compuware 4.600 12-jan-1999 10 6C74309CB84A9F07C5ED\  
VENDOR_STRING=989898;0;PERM ck=12
```



Caution

The license string is case-sensitive.

3. Save the `license.dat` file.
4. Set the `LM_LICENSE_FILE` environment variable in the global environment using the appropriate command for your particular shell.

C shell

Use the following:

```
setenv LM_LICENSE_FILE /<full path to license file>/license.dat
```

Bourne shell

Use the following:

```
LM_LICENSE_FILE=/<full path to license file>/license.dat
```

Korn shell

Use the following:

```
export LM_LICENSE_FILE=/<full path to license file>/license/dat
```


Chapter 4. Installing a License on Novell

Novell platforms use concurrent-user licensing exclusively. They do not support single-user licenses. Concurrent-user licensing allows you to purchase a specific number of licenses without assigning these licenses to particular workstations. Instead, licenses are “checked out” by users on a first-come, first-served basis when they access the product. When all available licenses are issued, no additional users can run the product until another user exits and a license is “checked in.” This request-and-issue process is managed by the License Manager, specifically by the FLEXlm License Server service portion of the License Manager. The License Manager must be running on a computer or server that is always available to all client workstations needing access to the product.

This chapter includes the following sections:

- **Installing the License Manager** — Instructions for installing the License Manager on the machine that acts as the FLEXlm server machine.
- **Installing a License** — Instructions for installing a concurrent-user license on the server machine.
- **Configuring Each Client Machine** — Instructions for configuring each client machine that will check out a license from the server machine.
- **Configuring the License Manager for Automatic Startup** — Instructions for configuring the License Manager to start up automatically whenever the server machine is rebooted.
- **Configuring the License Manager for Automatic Startup** — Instructions for shutting down the License Manager server manually.
- **Diagnostics** — Information about running diagnostics from a client machine.

Installing the License Manager

Choose a stable Novell machine that is always available to be the License Manager server. To install the License Manager, follow these steps:

1. Place all the files in the `\cpwr\cwlm\novell` subdirectory on the CD in SYS or VOL at the following path:

```
SYS (or vol name):\cpwr\license
```

2. Start Novell NetWare and enter the following command on one line on the Novell console:

```
Load SYS (or vol name):\cpwr\license\compuwar.nlm
-c SYS (or vol name):\cpwr\license\license.dat
```

where `compuwar.nlm` is the license module from the CD, and `license.dat` is the permanent license on diskette.

3. To verify proper setup of the License Manager, enter the following command and search the listing for the `compuwar.nlm` module:

```
modules
```

Installing a License

You must have the License Manager installed before you proceed. If you have not yet installed the License Manager, see “Installing the License Manager” on page 4-1 for instructions. Follow this procedure for installing a permanent concurrent-user license on Novell. The `license.dat` file must be installed on the License Manager server.

1. Locate (on the License Manager server) the existing `license.dat` file, or use a text editor to create a file name `license.dat` and save it in the directory where the License Manager is located.
2. Paste or type your license string into the license file (don't include information preceded with #). For example:

```
SERVER NOV4_1SV 0020af9adb94 TCP:7166
DAEMON compuware compuwar
FEATURE QARun Compuware 4.600 12-jan-1999 10 6C74309CB84A9F07C5ED\
VENDOR_STRING=989898;0;PERM ck=12
```



The license string is case-sensitive.

3. Save the `license.dat` file.
4. To start the License Manager, perform the procedure below for either the Novell server or remote console:
 - From the Novell server console, type:

```
load SYS(or vol name):\cpwr\license\compuwar.nlm -c SYS:\cpwr\license\license.dat
```

- From the Novell remote console (Rconsole), type:

load SYS(or vol name):\cpwr\license\compuwar.nlm -c SYS:\cpwr\license\license.dat

5. To verify installation of the License Manager, type **modules**. Search the listing for the `compuwar.nlm` module.

Configuring Each Client Machine

Each client workstation must be configured to access the License Manager. This is a three-step process that includes (1) installing and configuring the IPX/SPX protocol on each client, (2) checking for DLLs, and (3) setting the license variable and communication variable using the SPX option or the TCP option. The following sections describe each of these steps for the various Windows platforms.



Note

The FLEXlm environment is set using the License Administration Utility, which uses a registry setting. In special conditions, an environment variable can be used.

IPX/SPX Protocol on Windows NT 4.x

1. Install and configure the IPX/SPX protocol on each client, using the appropriate procedure:
 - Install the IPX/SPX protocol using Microsoft's Novell NetWare client.
 - Install Novell Client v4.11a, which you can download from www.novell.com.
2. Check that the following files are in the `\windows\system` or `\system32` directory. If Novell Client v4.11a is installed, these files should have been automatically copied to this directory. If not, copy the files from the `\public\client\doswin` directory on the Novell CD or the Novell server. Unpack the files with the `nwunpack.exe` utility, which is in the same directory.
 - `nwcalls.dll (\System)`
 - `nwipxspx.dll (\System32)`
 - `nwlocale.dll (\System)`
 - `nwnet.dll (\System)`
 - `tli_spx.dll (\System)`
 - `tli_win.dll (\System)`
3. Two variables must be set: (1) the license variable must be set to the license file, and (2) the communication variable must be set to the appropriate communication protocol. There are two options for setting variables and values:
 - SPX option

- TCP option

**SPX Option
Windows NT 4.x**

1. Click the taskbar's **Start** button and choose **Control Panel>System>Environment**.
2. Set a **system** variable (not a user variable) to set the license variable to the license file:
 - a. In the **Variable** field, type LM_LICENSE_FILE.
 - b. In the **Value** field, type:

```
x:\Program Files\Compuware\license\license.dat
```

Where x:\Program Files\Compuware\license is the directory where your license file is located and license.dat is the name of your license file. This value is the local file, but it can be the mapped location on the server with the same information.
 - c. Click **Set**.
3. Set a **system** variable (not a user variable) to set the communication variable:
 - a. In the **Variable** field, type FLEXLM_COMM_TRANSPORT.
 - b. In the **Value** field, type SPX.
 - c. Click **Set**.
4. Click **Apply**.
5. Reboot the computer.

**TCP Option
Windows NT 4.x**

1. Click the taskbar's **Start** button and choose **Control Panel>System>Environment**.
2. Set a **system** variable (not a user variable) to set the license variable to the license file:
 - a. In the **Variable** field, type LM_LICENSE_FILE.
 - b. In the **Value** field, type **one** of the following:

```
x:\Program Files\Compuware\license\license.dat
```

or

```
7166@hostname
```

where x:\Program Files\Compuware\license is the directory where your license file is located, license.dat is the name of your license file, and hostname is the name of the host machine. This value is the local file, but it can be the mapped location on the server with the same information.
 - c. Click **Set**.
3. Set a **system** variable (not a user variable) to set the communication variable:

- a. In the **Variable** field, type FLEXLM_COMM_TRANSPORT.
 - b. In the **Value** field, type TCP.
 - c. Click **Set**.
4. Click **Apply**.
 5. Reboot the computer.
1. Install and configure the IPX/SPX protocol on each client, using the appropriate procedure:
 - Install the IPX/SPX protocol using Microsoft's Novell NetWare client.
 - Install Novell Client v4.11a, which you can download from www.novell.com.
 2. Check that the following files are in the `\windows\system` or `\system32` directory. If Novell Client v4.11a is installed, these files should have been automatically copied to this directory. If not, copy the files from the `\public\client\doswin` directory on the Novell CD or the Novell server. Unpack the files with the `nwunpack.exe` utility, which is in the same directory.
 - `nwcalls.dll` (\System)
 - `nwipxspx.dll` (\System32)
 - `nwlocale.dll` (\System)
 - `nwnet.dll` (\System)
 - `tli_spx.dll` (\System)
 - `tli_win.dll` (\System)
 3. Two variables must be set: (1) the license variable must be set to the license file, and (2) the communication variable must be set to the appropriate communication protocol. There are two options for setting variables and values:
 - SPX option
 - TCP option

IPX/SPX Protocol on Windows 2000

SPX Option Windows 2000

1. From the **Start** menu, select **Settings>Control Panel**
2. Click the **System** icon. On the System Properties dialog box, click the **Advanced** tab. Click **Environment Variables**. The user variables are in the upper section and the environment variables are in the lower section.
3. Click **New** in the **System variables** section. The New System Variable dialog box appears.
4. In the **Variable Name** field, type FLEXLM_COMM_TRANSPORT.
5. In the **Variable Value** field, type SPX.

6. Click **OK**. The environment variable you just set appears in the system variables list. Click **OK**.
7. When you are finished, reboot the computer for the changes to take effect.

TCP Option Windows 2000

1. From the **Start** menu, select **Settings>Control Panel**
2. Click the **System** icon. On the System Properties dialog box, click the **Advanced** tab. Click **Environment Variables**. The user variables are in the upper section and the environment variables are in the lower section.
3. Click **New** in the **System variables** section. The New System Variable dialog box appears.
4. In the **Variable Name** field, type FLEXLM_COMM_TRANSPORT.
5. In the **Variable Value** field, type **one** of the following:

`x:\Program Files\Compuware\license\license.dat`

or

`7166@hostname`

where `x:\Program Files\Compuware\license` is the directory where your license file is located, `license.dat` is the name of your license file, and `hostname` is the name of the host machine. This value is the local file, but it can be the mapped location on the server with the same information.

6. Click **OK**. The environment variable you just set appears in the system variables list. Click **OK**.
7. When you are finished, reboot the computer for the changes to take effect.

IPX/SPX Protocol on Windows 95x, 98

1. Install and configure the IPX/SPX protocol on each client, using the appropriate procedure:
 - Install the IPX/SPX protocol using Microsoft's Novell NetWare client.
 - Install Novell Client v2.5, which you can download from www.novell.com.
2. Check that the following files are in the `\windows\system` or `\system32` directory. If Novell Client v2.5 is installed, these files should have been automatically copied to this directory. If not, copy the files from the `\public\client\doswin` directory on the Novell CD or the Novell server. Unpack the files with the `nwunpack.exe` utility, which is in the same directory.
 - `nwcalls.dll` (\System)
 - `nwipxspx.dll` (\System32)
 - `nwlocale.dll` (\System)
 - `nwnet.dll` (\System)

- `tli_spx.dll` (\System)
 - `tli_win.dll` (\System)
3. Two variables must be set: (1) the license variable must be set to the license file, and (2) the communication variable must be set to the appropriate communication protocol. There are two options for setting variables and values:
 - SPX option
 - TCP option

SPX Option Windows 95 or 98

1. Use a text editor to set both the license variable and the communication variable. Open the `autoexec.bat` file and add the following two lines **exactly as you see them**.

```
set LM_LICENSE=c:\Program Files\Compuware\license\license.dat  
Set FLEXLM_COMM_TRANSPORT=SPX
```

where `c:\Program Files\Compuware\license` is the directory where your license file is located and `license.dat` is the name of your license file. This value is the local file, but it can be the mapped location on the server with the same information.

2. Reboot.

TCP Option Windows 95 or 98

1. Use a text editor to set both the license variable and the communication variable. Open the `autoexec.bat` file and add one of the following two sets of lines **exactly as you see them; the information is case-sensitive**:

```
set LM_LICENSE_FILE=c:\Program Files\Compuware\license\license.dat  
set FLEXLM_COMM_TRANSPORT=7166@hostname
```

or

```
set LM_LICENSE_FILE=7166@hostname  
set FLEXLM_COMM_TRANSPORT=TCP
```

where `c:\Program Files\Compuware\license` is the directory where your license file is located, `license.dat` is the name of your license file, and `hostname` is the name of the host machine. This value is the local file, but can be the mapped location on the server with the same information.

2. Reboot.

Configuring the License Manager for Automatic Startup

Because all license validation is done by the License Manager, it must be started and kept running in order to use Compuware products. The License Manager must be started on

the machine where it was installed. To automatically start the License Manager when the server is started, add the following command to the server's `autoexec.ncf` file:

```
load c:\cpwr\license\compuwar.nlm -c c:\cpwr\license\license.dat
```

where `c:\cpwr\license` is the Novell server directory where `compuwar.nlm` is located and `license.dat` is the name of your license file.

Manually Shutting Down the License Manager Server

On occasion, you may need to manually shut down the License Manager. To do so, type the following command from the Novell console:

```
Unload compuwar.nlm
```

Diagnostics

Both the License Administration Utility and the `lmutil` commands are available, but **diagnostics can only be run from the client machine.**

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