



MERCURY FUNCTIONAL TESTING™

VERSION 9.0

Concurrent License Server Installation Guide

MERCURY™

Mercury Functional Testing Concurrent License Server

Installation Guide

Version 9.0

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Mercury Functional Testing Concurrent License Server Installation Guide, Version 9.0

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1

Before You Install

Welcome to the Mercury Functional Testing Concurrent License Server for QuickTest Professional, QuickTest Professional add-ins, WinRunner, and WinRunner add-ins.

Before you install the concurrent license server, you need the following minimum system requirements:

Computer/Processor	An IBM-PC or compatible with a Pentium III 550 MHz or higher microprocessor
Operating System	Windows 98/ME/NT/2000/XP/2003
Memory	A minimum of 32 MB of RAM (128 MB recommended)
Free Hard Disk Space	10 MB of free disk space
Accessories	2x CD ROM drive
Protocols	TCP/IP

2

Setting Up the Concurrent License Server

You can work with QuickTest and WinRunner with two types of licenses: seat and concurrent. The Mercury Functional Testing Concurrent License Server supports concurrent licensing on QuickTest version 6.0 and later, QuickTest add-ins version 6.5 and later, WinRunner version 7.01 and later, and WinRunner add-ins version 7.6 and later.

If you are working with a version of QuickTest or WinRunner later than 8.2.x, you need to use the Mercury Functional Testing Concurrent License Server version 9.0.

This guide describes everything you need to know about installing the Mercury Functional Testing Concurrent License Server and a concurrent license key. For information on installing a seat license, refer to the *QuickTest Professional Installation Guide* or the *WinRunner Installation Guide*. If you are not sure which type of license to install, refer to the relevant product's installation guide or contact your system administrator or local Mercury representative.

Note that you must also install the QuickTest or WinRunner client, using the concurrent license option, on each computer on which you want to run QuickTest or WinRunner. When you install a concurrent license, you can install QuickTest or WinRunner on as many computers as you want. However, the Mercury Functional Testing Concurrent License Server regulates the number of copies of QuickTest and/or WinRunner that are allowed to run concurrently based on your concurrent license key.

You can increase the number of copies of QuickTest or WinRunner that you can run at the same time by purchasing additional QuickTest or WinRunner licenses from Mercury. To connect to the concurrent license server from QuickTest or WinRunner, you must install a valid license key on the concurrent license server. Note that a demo license option is not available for the Mercury Functional Testing Concurrent License Server. For information on installing the QuickTest and WinRunner clients, refer to the *QuickTest Professional Installation Guide* or the *WinRunner Installation Guide*.

This chapter describes:

- ▶ Setting up QuickTest or WinRunner with a Concurrent License
- ▶ Upgrading the Concurrent License Server
- ▶ Installing a Concurrent License Server
- ▶ Requesting a Concurrent License Key
- ▶ Installing a Concurrent License Key

Setting up QuickTest or WinRunner with a Concurrent License

Computers running QuickTest or WinRunner using a concurrent license must always be able to access the concurrent license server. This section summarizes the steps for setting up QuickTest or WinRunner with a concurrent license.

Notes:

The Mercury Functional Testing Concurrent License Server supports concurrent licensing on QuickTest version 6.0 or later, and on WinRunner version 7.01 or later. Note that WinRunner 7.0 (or earlier) is supported only by the WinRunner Floating License Server. Therefore, if you want to work with QuickTest or WinRunner version 7.01 or later, and WinRunner 7.0 or earlier, each license server must be installed on a different computer.

You can use the *commuter licensing feature* for computers that temporarily cannot access the concurrent license server (for example, users taking their laptop computers on business trips). The commuter licensing feature is available for Mercury Functional Testing Concurrent License Server version 7.6 and later. If you have a license key for an earlier version of the concurrent license server, you need to request a new Mercury Functional Testing Concurrent License Server license key from Mercury Customer Support. For more information, refer to the *QuickTest Professional Installation Guide* or the *WinRunner Installation Guide*.

To set up QuickTest or WinRunner with a concurrent license:

- 1** Install the Mercury Functional Testing Concurrent License Server on a network computer. For more information, see “Installing a Concurrent License Server” on page 8.
- 2** Request your concurrent license key. For more information, see “Requesting a Concurrent License Key” on page 17.
- 3** Once you receive the concurrent license key from Mercury, enter the key to install your license on the license server. For more information, see “Installing a Concurrent License Key” on page 19.
- 4** Run the QuickTest or WinRunner setup program on each computer from which you want to run QuickTest or WinRunner. Select **Concurrent License** in the License Type screen. For more information, refer to the *QuickTest Professional Installation Guide* or the *WinRunner Installation Guide*.
- 5** Begin using QuickTest or WinRunner. When QuickTest or WinRunner opens, it automatically finds the license server and connects to it.

Note: If your QuickTest or WinRunner client computer cannot find the license server and connect to it, you may need to set the LSHOST or LSFORCEHOST variable. For more information, see “Setting the LSHOST or LSFORCEHOST Variable” on page 44.

Upgrading the Concurrent License Server

If a previous version of the concurrent license server is currently installed on your network computer, you can upgrade to Mercury Functional Testing Concurrent License Server 9.0.

If you are upgrading the license server on Windows NT 4.0, 2000, or XP, you must have administrator privileges.

To upgrade the concurrent license server:

- 1** Manually stop the Sentinel LM Service. Choose **Start > Settings > Control Panel > Administrative Tools > Services**. In the Services dialog box, right-click **Sentinel LM** and choose **Stop**.
- 2** Save the **lservrc** file to a backup location. The **lservrc** file is located either in the folder in which the Sentinel LM server is currently installed, for example, C:\Program Files\Rainbow Technologies\SentinelLM 7.3.0 Server\English\lservrc, or in the location specified by the **lservrc** environment variable.

Tip: To find the path of **lservrc** environment variable, right click **My Computer** and choose **Properties**. In the System Properties dialog box, select the **Advanced** tab, and then click **Environment Variables**. The path is displayed in the **User variables for <user>** box of the Environment Variables window for the **lservrc** variable. For example, C:\Program Files\Common Files\Mercury Interactive\License Manager\lservrc.

- 3 Install the Mercury Functional Testing Concurrent License Server on the license server computer. The license server installation upgrades the license server to the new version. For more information, see “Installing a Concurrent License Server” on page 8.
- 4 After installation, copy the **lservrc** file that you backed up to the following location, depending on whether QuickTest is installed:
 - If QuickTest is installed, copy the file to the location specified by the **lservrc** environment variable.

Tip: To find the path of **lservrc** environment variable, right click **My Computer** and choose **Properties**. In the System Properties dialog box, select the **Advanced** tab, and then click **Environment Variables**. The path is displayed in the **User variables for <user>** box of the Environment Variables window for the **LSERVRC** variable. For example, C:\Program Files\Common Files\Mercury Interactive\License Manager\lservrc.

- If QuickTest is not installed, copy the **lservnt.exe** file to the same folder as the **lservnt.exe** file, for example, C:\Program Files\Common Files\SafeNet Sentinel\Sentinel LM Server\WinNT\lservnt.exe.

Tip: To find the location of **lservnt.exe**, choose **Start > Settings > Control Panel > Administrative Tools > Services**. In the Services dialog box, right-click **Sentinel LM** and choose **Properties**. The path for **lservnt.exe** is displayed in the **Path to executable** box.

Installing a Concurrent License Server

This section describes how to install a concurrent license server on a computer.

Note: If a previous version of the concurrent license server is already installed on the computer and you want to upgrade to the latest version, you must perform specific steps. For more information, see “Upgrading the Concurrent License Server” on page 6.

It is recommended to install the license server on a computer that is running Windows NT 4.0, 2000, XP, or 2003. If you are installing on Windows NT 4.0, 2000, XP, or 2003, you must have administrator privileges to install the license server.

You must install the license server on a computer that has TCP/IP installed. To ascertain that TCP/IP is installed and functioning properly, you can check that another computer on the network can identify the computer where you plan to install the license server. On another computer, click **Start > Run**. In the **Open** box, type ping <name of the computer where the license server will be installed>. Click **OK**. If the first computer can identify the second computer on the network, an MS-DOS window opens and four successful reply messages open. If the first computer cannot identify the second computer on the network, an MS-DOS window opens, but there are no successful reply messages.

After you have installed the concurrent license server, it must be running whenever you use QuickTest or WinRunner.

To install the concurrent license server:

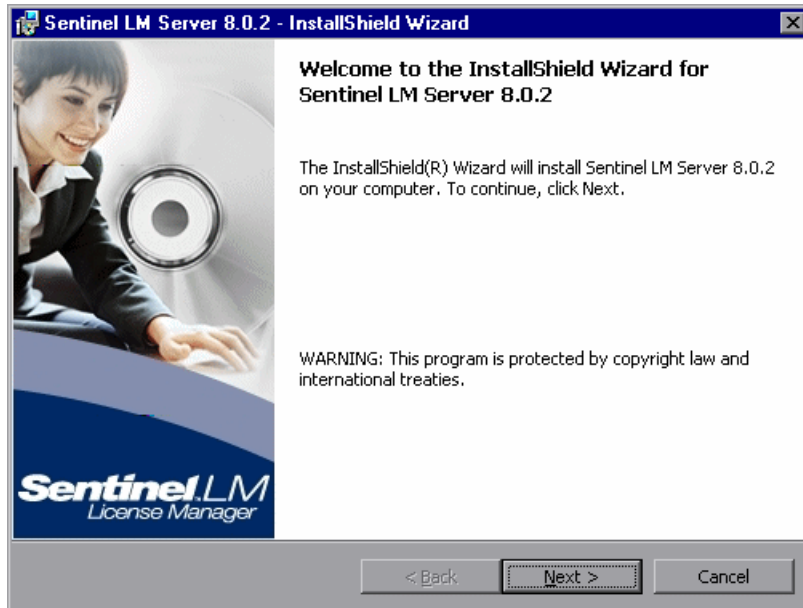
- 1 Insert the Mercury Functional Testing Concurrent License Server CD-ROM into the drive from which you want to install. If the CD drive is located on your local computer, the Mercury Functional Testing Concurrent License Server installation window opens. If you are installing from a network drive, connect to it and run **autorun.exe**.



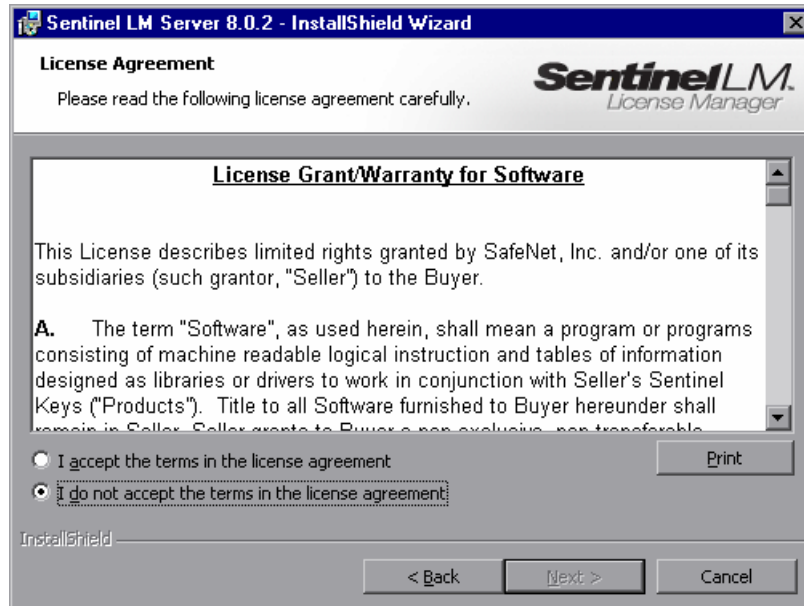
Note: You must be logged on with Administrator privileges (if applicable on your operating system) to install the concurrent license server.

2 Click Install the Mercury Functional Testing Concurrent License Server.

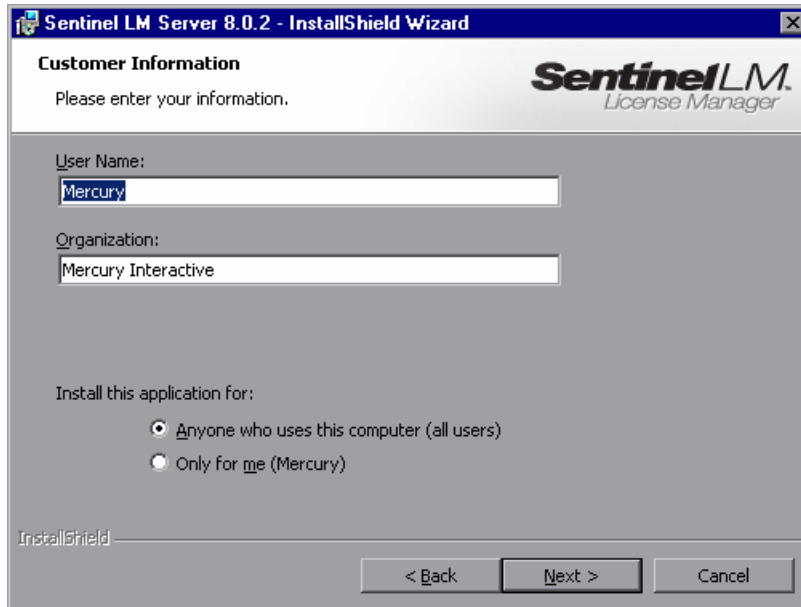
The Sentinel LM Server setup program starts and the Sentinel LM Welcome screen opens.



- 3 Click **Next**. The Sentinel LM License Agreement screen opens.

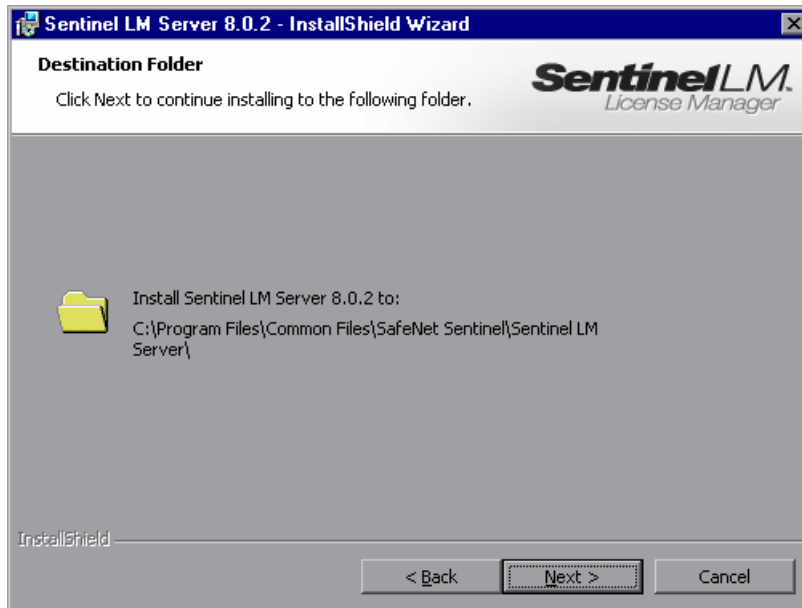


- 4 Select **I accept the terms in the license agreement** and click **Next** to accept the terms of the license agreement and install the Mercury Functional Testing Concurrent License Server. (If you select **I do not accept the terms in the license agreement**, you will not be able to continue with the installation.) The Customer Information screen opens.



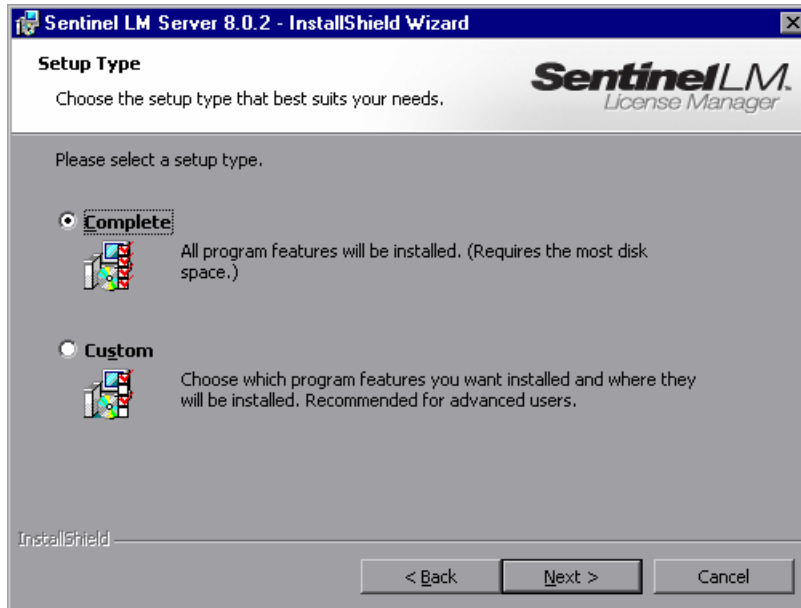
- 5 Type your name and the name of your organization, and then select whether to install the application for anyone using your computer, or only for yourself. Click **Next**. The Destination Folder screen opens.

- 6 The Destination Folder specifies where the Mercury Functional Testing Concurrent License Server will be installed.



Click **Next** to proceed. The Setup Type screen opens.

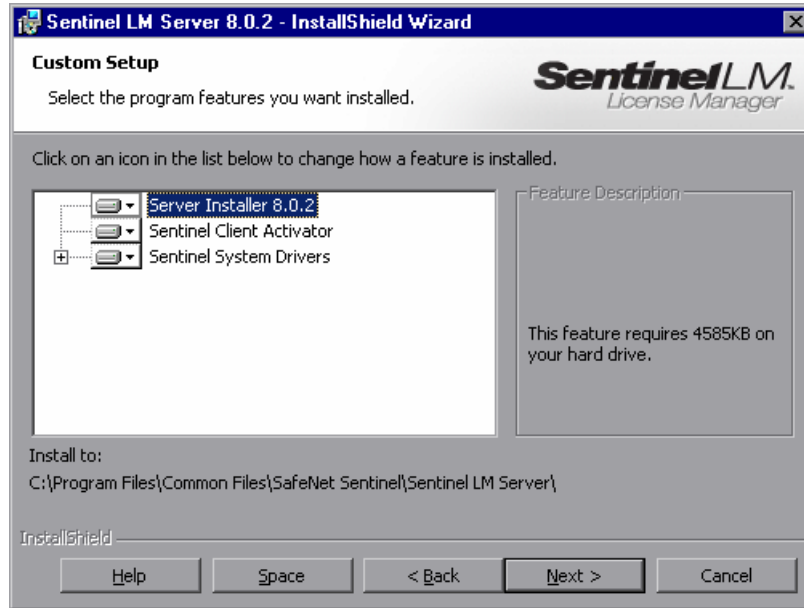
7 In the Setup Type screen, select **Complete** or **Custom** installation.



Click **Next** to proceed. If you chose **Custom**, proceed to step 8. If you chose **Complete**, proceed to step 9.

Note: The **Complete** option installs additional program features that are not required for the Mercury Functional Testing Concurrent License Server. For this reason, you may prefer to select the **Custom** option and install only the required program features, as described below.

- 8** In the Custom Setup screen, select the features you want to install, and how they should be installed. You must install the **Server Installer 8.0.2** feature. Other features are optional, and are not used by the Mercury Functional Testing Concurrent License Server.

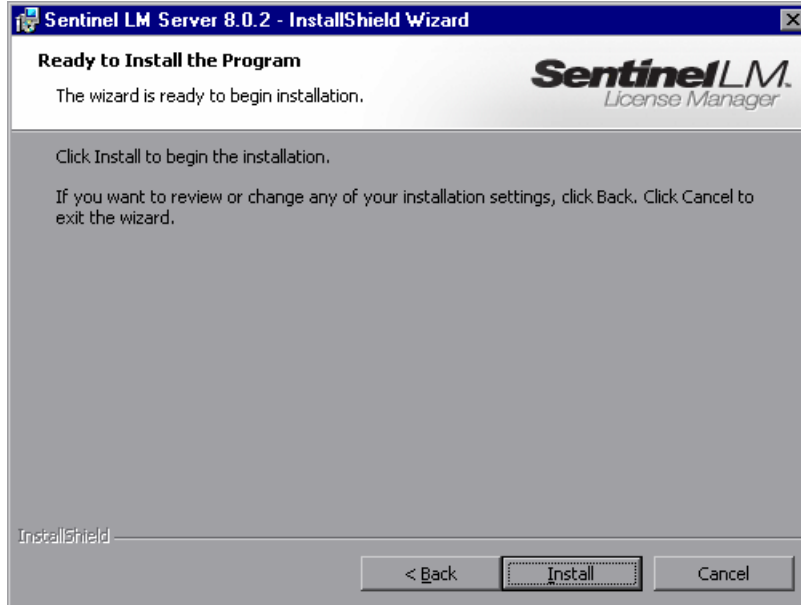


You can click the dropdown arrow next to each feature, and then select whether to install only the feature, or the feature and all its sub-features, to the local hard drive.

Click **Next**.

Tip: Click **Space** to view the disk space requirements for the selected features.

- 9 The Ready to Install the Program screen opens.



Click **Install**.

- 10 The installation process begins. To pause or quit the installation process, click **Cancel**.
- 11 When the installation is complete, the InstallShield Wizard Completed screen opens. Click **Finish** to exit the wizard and complete the installation process.

Once you have installed the concurrent license server, you must request and install the concurrent server license key before you can use QuickTest or WinRunner. Note that there is no concurrent demo license available.

Requesting a Concurrent License Key

Once the concurrent license server is installed, you must run the Concurrent License Server license installation program to request your license key from Mercury. You must run the Concurrent License Server license installation program on the computer on which you installed the concurrent license server.

To request a concurrent license key:

- 1 Insert the Mercury Functional Testing Concurrent License Server CD-ROM into the drive from which you want to install. If the CD-ROM drive is located on your local computer, the Mercury Functional Testing - License Server Installation window opens.

If you are installing from a network drive, connect to it and run **autorun.exe**.



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Concurrent License Server

To use QuickTest and/or WinRunner with a concurrent license, you must:

- Install the license server on a network computer accessible from all QuickTest and WinRunner computers.
- Install the concurrent license on the license server only. (Do not install on any other computer.)

Warning: If you want to use seat licenses, do not use this CD. To install seat licenses, use your QuickTest or WinRunner CD to install that product with seat licenses.

Install the Mercury Functional Testing Concurrent License Server
Install a network license server for your functional testing product.
If you are upgrading from an earlier version of the concurrent license server, you must manually stop the Sentinel LM service before continuing with the installation.

Install Concurrent License
Install a concurrent license on the Mercury Functional Testing Concurrent License Server.

Open Installation Guide
Open the Mercury Functional Testing Concurrent License Server Installation Guide in Adobe® Portable Document Format (PDF).
(Requires Adobe® Reader® - Download)

Exit

2 Click **Install Concurrent License**.

The Concurrent License Server license installation program starts and the Welcome screen opens, displaying the locking code for your computer and the license type.



- 3** Use the Web site link in the Welcome screen to send the locking code, license type, and maintenance number to Mercury Customer Support. Note that you can copy and paste the information from the Welcome screen into the license request form on the Mercury Interactive Customer Support Web site or into an e-mail message.
- 4** If you already have your license key, proceed to step 3 on page 22 in the “Installing a Concurrent License Key” section. Otherwise, click **Cancel** and wait for your license key to arrive. When it arrives, follow the instructions as described in “Installing a Concurrent License Key” on page 19.

Installing a Concurrent License Key

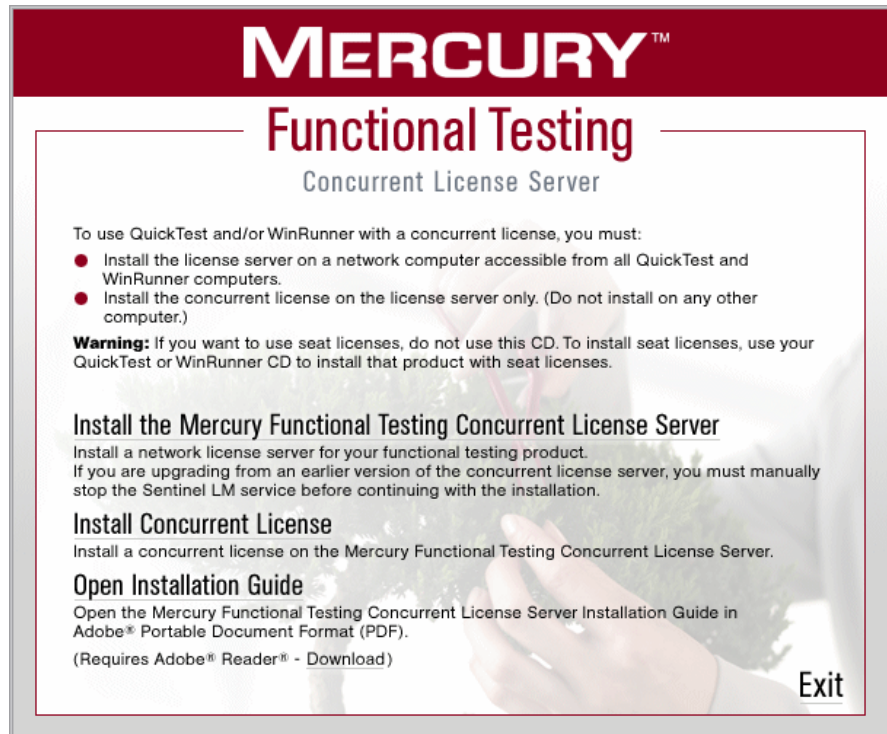
Once you receive your license key from Mercury, you must run the Concurrent License Server license installation program again to install the key. The concurrent license key must be installed on the computer on which you installed the concurrent license server.

You cannot install a concurrent license key remotely (for example, using Symantec pcAnywhere, Citrix, or Terminal Server).

To install your concurrent license key:

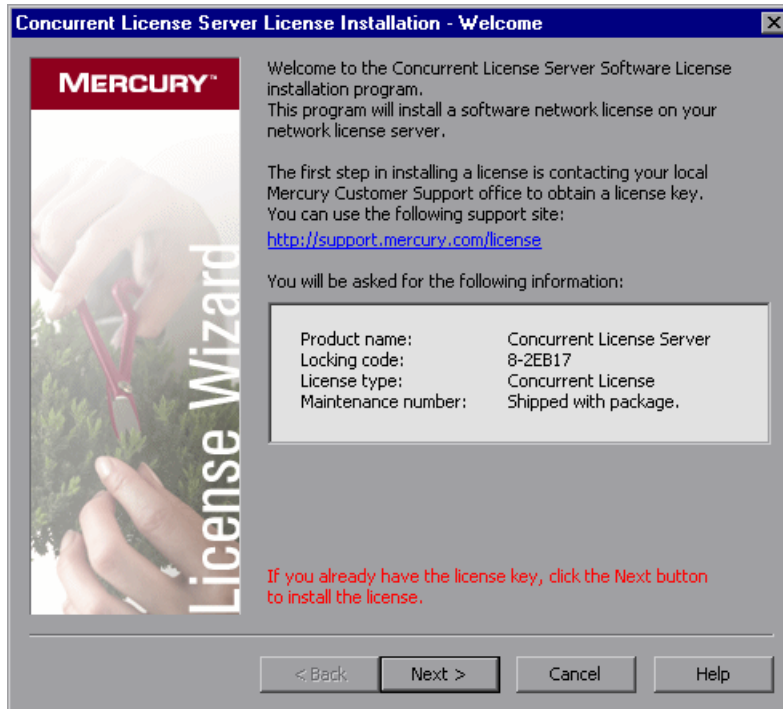
- 1 Insert the Mercury Functional Testing Concurrent License Server CD-ROM into the drive from which you want to install. If the CD-ROM drive is located on your local computer, the Mercury Functional Testing - License Server Installation window opens.

If you are installing from a network drive, connect to it and run **autorun.exe**.



2 Click Install Concurrent License.

The Concurrent License Server license installation program starts and the Welcome screen opens, displaying the locking code for your computer and the license type.



- 3 Click **Next** to begin installing the license. The License Key screen opens.



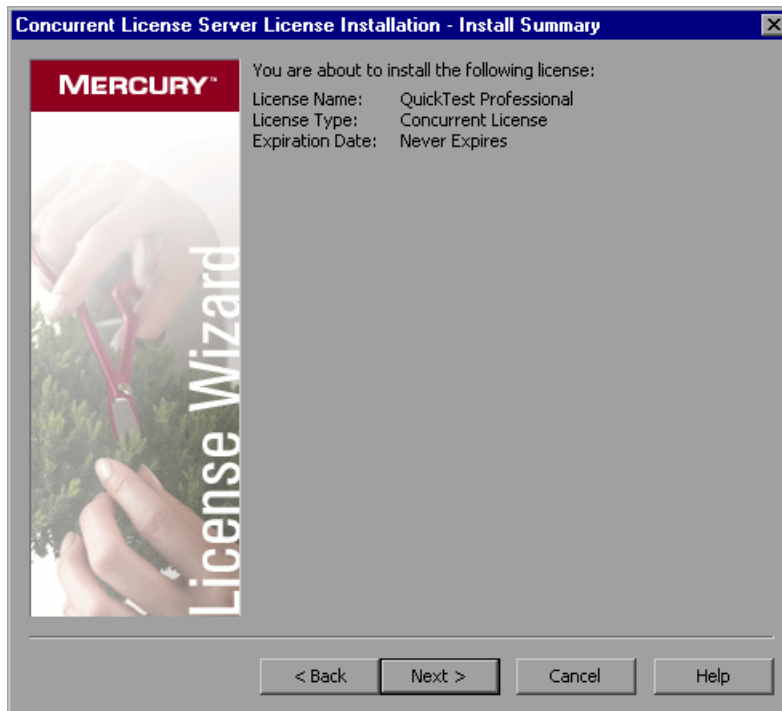
Note: The license key is valid only for the computer with the locking code that you entered in the license request form.

- 4 Enter the license key that you received from Mercury, including the # character at the end of the license key.



Tip: If you copy the license key to your clipboard, you can paste it in the license key box by clicking the Paste From Clipboard button.

5 Click **Next**. The Install Summary screen opens.



- 6 Verify that the information is correct and click **Next**. The Finish screen opens.



If you entered a valid license key, the Finish screen confirms that your license key was successfully installed.

If the license could not be installed successfully, a message is displayed, describing why. For example, if you did not enter the license key correctly, the installation will not succeed. If the license could not be installed, a **Send to support** button is displayed. You can click **Send to support** to create an e-mail with licensing information and send it to your nearest customer support location. Make sure that you fill in the required information in the e-mail so that customer support can assist you.

Tip: You can install another license by selecting the **Install another license** check box, then repeating steps 4 to 6.

- 7** If you do not want to install another license, click **Finish** to complete the license installation process and close the wizard.
-

Notes:

For more information on licensing and the Mercury Functional Testing Concurrent License Server, search the Customer Support Knowledge Base located in the Mercury Customer Support Web site.

If you are using the Mercury Functional Testing Concurrent License Server with QuickTest Professional, refer to Knowledge Base Problem ID: 18251, *Top Astra QuickTest/QuickTest Professional Licensing Articles*.

If you are using the Mercury Functional Testing Concurrent License Server with WinRunner, refer to Knowledge Base Problem ID: 11625, *Top WinRunner Licensing Articles*.

3

Concurrent License Server Tips and Tricks

This chapter provides hints, tips, and troubleshooting information for your concurrent license server. It also describes how to stop and restart the concurrent license server.

This chapter describes:

- ▶ General Tips
- ▶ Stopping and Restarting the Concurrent License Server
- ▶ Locking Codes
- ▶ Known Problems and Workarounds

General Tips

When the client computers running QuickTest and/or WinRunner are on multiple domains, you should install a license server on each domain.



It is recommended to install the license server on a computer running Windows NT 4.0, 2000, XP, or 2003. The computer should also have a fixed IP address and must have TCP/IP installed.

Stopping and Restarting the Concurrent License Server


If you want to reset the license server, it is recommended to restart the computer. You can also turn off the license server and then turn it on again without restarting the computer by following the instructions below.

Note: The concurrent license server starts automatically at startup on the host computer.

To stop and restart the license server if the host computer is running Windows 2000, XP, or 2003:

- 1** Click **Start > Settings > Control Panel**.
- 2** Double-click **Administrative Tools** and then double-click **Services**. The **Services** dialog box opens.
-  **3** In the **Services (Local)** list, select **Sentinel LM** and click **Stop Service**.
-  **4** To restart the license server, highlight **Sentinel LM** and click **Start Service**.

Tips:

-  You can highlight **Sentinel LM** and click **Restart Service** to stop and then restart the license server.

You can also shut down the license server using the LSRVDOWN utility. For more information, see page 37.

To stop and restart the license server if the host computer is running Windows NT 4.0:

- 1** Click **Start > Settings > Control Panel**.
- 2** Double-click **Services**. The **Services** dialog box opens.
- 3** In the **Service** list, select **Sentinel LM** and click **Stop**.
- 4** To restart the license server, highlight **Sentinel LM** and click **Start**.

To stop and restart the license server if the host computer is running Windows 98 or ME:

- 1 In the task bar, right-click the **Sentinel LM** icon and choose **Close** from the pop-up menu. Alternatively, in the Sentinel LM window, choose **File > Exit**.
- 2 To restart the concurrent license server, reboot your computer.

Locking Codes

A locking code is a number generated by a license server or a seat license host. Every computer has its own locking code. The locking code, together with the maintenance number, are used to generate the license key for the server computer. A license key that is generated based on the locking code from one computer cannot be used on another computer.

Known Problems and Workarounds

The following table provides the known problems and workarounds:

Problem	Workaround
The concurrent license server is installed on a different domain/subnet than the QuickTest or WinRunner clients.	Open UDP port 5093 between domains. Set the LSHOST or LSFORCEHOST parameters on the QuickTest or WinRunner client computers. For more information, see “Setting the LSHOST or LSFORCEHOST Variable” on page 44. To check the connection, use ping -a from the Windows command line. If this is successful, it should display: Reply from <server i.p. address> : <byte size> < time >.
You want to install concurrent license servers on Novell or Unix computers.	The concurrent license server software does not support Novell or Unix. Generate a seat license key for each QuickTest or WinRunner client computer. Alternatively, use a Windows platform network computer as your concurrent license server.

Problem	Workaround
Although you have a legal license key installed on your concurrent license server, you cannot start QuickTest or WinRunner.	If you install QuickTest or WinRunner using the setup.exe file instead of from the autorun screen, it automatically installs QuickTest or WinRunner with the seat license option. In the message box that opens when you try to open QuickTest or WinRunner, click Install License . This opens the License Installation utility, which enables you to change your license type to the concurrent license option.
You have changed the date on the computer where the concurrent license server is installed, for example, due to date operations testing. This locked the concurrent license server license key.	Restore the computer's clock to the original date and contact Mercury Interactive Customer Support for further assistance.

For more information about these and other issues, refer to the QuickTest and/or WinRunner Knowledge Base in the Mercury Customer Support Web site at <http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>.

4

License Server Error Codes

This chapter provides information regarding concurrent license server error messages that may open.

This chapter describes:

- ▶ Error 5: Cannot talk to the license manager. “LocalHost” server not running
- ▶ Error 19: Cannot install a license code

Error 5: Cannot talk to the license manager. “LocalHost” server not running

The concurrent license server has stopped.

- ▶ For Windows NT, choose **Start > Settings > Control Panel > Services**. Locate the Sentinel LM service and click **Start**.
- ▶ For Windows 2000, XP, and 2003, choose **Start > Programs > Administrative Tools > Services**. Locate the Sentinel LM service and click **Start**.

If the license server does not start, contact Mercury Interactive Customer Support for assistance.

Error 19: Cannot install a license code

Error 19 can occur in two situations:

► **Failed to add license string "Unknown" to the license server on "NO-NET."**

A seat license cannot be installed on the concurrent license server running on the specified computer.

► **Failed to add license string UNKNOWN to the license server on "Local-host."**

A concurrent license cannot be installed on the concurrent license server running on the specified computer.

Reasons that Error 19 Occurs

The following table provides general information about why error 19 occurs:

Possible Causes	Possible Solutions
The license key is node-locked and does not match the locking code of the PC where the license server is being installed.	Contact Mercury Interactive Customer Support to reissue the license with the correct license key.
When you try to install a seat license, the license key is for a concurrent license.	Copy lsdecode.exe from Mercury Functional Testing Concurrent License Server CD-ROM\utils to Program Files\Common Files\Mercury Interactive\License Manager and run the lsdecode.exe file. This displays the license key information, which enables you to verify that you are installing the correct license type.

Possible Causes	Possible Solutions
<p>The license key was entered incorrectly.</p>	<p>Copy lsdecode.exe from Mercury Functional Testing Concurrent License Server CD-ROM\utils to Program Files\Common Files\Mercury Interactive\License Manager and run the lsdecode.exe file. This displays the license key information, which enables you to verify that you are installing the correct license type.</p>
<p>The license key has already been installed.</p>	<p>Check whether the lservrc file exists. The location of the file depends on whether QuickTest is currently installed.</p> <ul style="list-style-type: none"> • If QuickTest is installed, the location of the file is specified by the lservrc environment variable. <p>Tip: To find the path of lservrc environment variable, right click My Computer and choose Properties. In the System Properties dialog box, select the Advanced tab, and then click Environment Variables. The path is displayed in the User variables for <user> box of the Environment Variables window. For example, C:\Program Files\Common Files\Mercury Interactive\License Manager\lservrc.</p> <ul style="list-style-type: none"> • If QuickTest is not installed, the file is located in the same folder as lservnt.exe. By default, this is C:\Program Files\Common Files\SafeNet Sentinel\Sentinel LM Server\WinNT\lservnt.exe <p>Tip: To find the path of lservnt.exe, choose Start > Settings > Control Panel > Administrative Tools > Services. In the Services dialog box, right click Sentinel LM and choose Properties. The path for lservnt.exe is displayed in the Path to executable box.</p> <p>If the lservrc file exists, the license key is installed already. You may use the license server.</p>

5

Concurrent License Server Utilities

This chapter provides a general overview of the utilities included with the Mercury Functional Testing Concurrent License Server. These utilities assist you in managing your QuickTest Professional and WinRunner concurrent licenses, and are part of the Sentinel License Manager, which is supplied with the Mercury Functional Testing Concurrent License Server.

For more information about the utilities described in this chapter, refer to the *Sentinel LM System Administrator's Help* located in the **SysAdminHelp** folder of the Mercury Functional Testing Concurrent License Server CD-ROM. (Open the **index.html** file to access the help.)

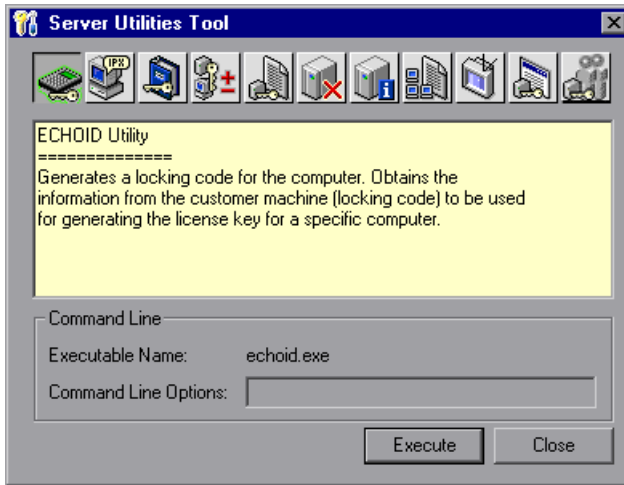
This chapter describes:

- Overview
- Displaying Current Concurrent License Server Users
- Displaying License Servers
- Monitoring License Servers
- Setting the LSHOST or LSFORCEHOST Variable

Overview

You can use the WLMADMIN utility to monitor a concurrent license server. You can use the other Mercury Functional Testing server management utilities to verify and manage specific elements of your concurrent license server.

You can start Mercury Functional Testing server management utilities from a Windows user interface by running **SrvUtils.exe** in the **Mercury Functional Testing Concurrent License Server Installation CD-ROM\utils** folder.



When the Server Utilities Tool opens, select the utility you want to run, and click **Execute**.

The following table provides a brief description of the Mercury Functional Testing license management utilities and brief examples to facilitate usage:

Utility	Description/Example of Usage
ECHOID Utility echoid.exe	Generates a computer's locking code. Obtains the information from your computer (locking code) that is used to generate the license key for a specific computer.
IPXECHO Utility ipxecho.exe	Displays the IPX network address on the computer on which it is run. Used to determine the IPX address of a license server.

Utility	Description/Example of Usage
LSDECODE Utility lsdecode.exe	<p>Displays the license key information, which enables you to check that you are installing the correct license type.</p> <p>It decodes a Mercury Functional Testing concurrent license key (lserverc) and retrieves license information, for example, the license type, the maximum number of concurrent users, and so forth.</p> <p>Make sure that the server utilities application (SrvUtils.exe) and the LSDECODE utility (lsdecode.exe) are located in the same directory as the lserverc file.</p>
LSLIC Utility lslic.exe	<p>Adds or removes a license key. You can use the following command line options:</p> <ul style="list-style-type: none"> • -a (add) -f (file name): adds a license key from a license file • -removeall removes all licenses from a Mercury Functional Testing Concurrent License Server <p>Either use the LSHOST environment variable to specify the license server or ensure that the server utilities application (SrvUtils.exe) and the LSLIC utility (lslic.exe) are located in the same directory as the lserverc file.</p>
LSMON Utility lsmon.exe	<p>Monitors a Mercury Functional Testing Concurrent License Server computer.</p> <p>You can run the LSMON utility on a client computer (running QuickTest or WinRunner, and connected to a concurrent license server) or the host computer (the license server).</p> <p>To monitor a remote Mercury Functional Testing Concurrent License Server, specify <host name> or <IP address>. For example, <code>c:\lsmon.exe saturn</code> monitors the saturn host. For more information on this utility, see “Displaying Current Concurrent License Server Users” on page 41.</p>
LSRVDOWN Utility lsrvdwn.exe	<p>Shuts down the license server.</p> <p>Specify the license server host name as the command line option for this utility.</p> <p>You can also shut down the license server by stopping the service. For more information, see “Stopping and Restarting the Concurrent License Server” on page 28.</p>

Utility	Description/Example of Usage
<p>LSUSAGE Utility lsusage.exe</p>	<p>Displays usage information generated by the license server. The license server logs all license keys issued or denied, but it does not record license key updates.</p> <p>For example, lsusage.exe -l Usage-log-file</p> <ul style="list-style-type: none"> • [-c CSV-Format-New-log-file] • [-f Feature-Name1,Version:Feature-Name2,Version ...] • [-y Start-Year(YYYY) [-m Start-Month(MM) [-a Start-Day(DD)]]] • [-Y End-Year(YYYY) [-M End-Month(MM)] [-A End-Day(DD)]]]
<p>LSWHERE Utility lswhere.exe</p>	<p>Searches for Mercury Functional Testing Concurrent License Servers on the network and displays the names of all the computers running license servers. You can run this utility on a client computer (running QuickTest or WinRunner, and connected to a concurrent license server) or the host computer (the license server). The parameter <IP address> searches for a specific network host.</p> <p>For more information on this utility, see “Displaying License Servers” on page 41.</p>
<p>SLMDEMO Utility slmdemo.exe</p>	<p>Simulates license usage. This utility can "add" or "remove" licenses to or from a specific server and produce a log file. You can use this utility to check that the license key is installed correctly on the license server host and that you have the correct number of concurrent licenses.</p>
<p>WLMADMIN Utility WLMAdmin.exe</p>	<p>Monitors Mercury Functional Testing Concurrent License Server transactions and provides information on license servers, users, and computers running QuickTest or WinRunner using a concurrent license server. You can use this utility to check that a Mercury Functional Testing Concurrent License Server is running, and to monitor its usage.</p> <p>For more information on this utility, see “Monitoring License Servers” on page 42.</p>

Utility	Description/Example of Usage
<p>WLSGRMGR Utility Wlsgrmgr.exe</p>	<p>Provides an easy way to create a reservation file that reserves license tokens for specific network users or computers, or excludes specific users or computers from using license tokens.</p>
<p>WCommute.exe</p>	<p>Enables a concurrent license user to check out and check in a commuter license for QuickTest or WinRunner (either on the local computer or on a remote computer). A commuter license enables concurrent license users to temporarily use QuickTest or WinRunner on a computer that is temporarily not connected to the network.</p> <p>For more information on this utility, refer to the <i>QuickTest Professional Installation Guide</i> or the <i>WinRunner Installation Guide</i>.</p> <p>Note that this utility can be activated only from the command line, and not from within the Server Utilities Tool window.</p>
<p>WRCcommute.exe</p>	<p>Enables a concurrent license user to generate a locking code for a remote computer, which can be used to obtain and install a commuter license for QuickTest or WinRunner.</p> <p>For more information on this utility, refer to the <i>QuickTest Professional Installation Guide</i> or the <i>WinRunner Installation Guide</i>.</p> <p>Note that this utility can be activated only from the command line, and not from within the Server Utilities Tool window.</p>

The following table provides a description of variables used on QuickTest or WinRunner client computers to designate or control which concurrent license server(s) can be used:

Utility	Description/Example of Usage
LSFORCEHOST variable	Restricts a QuickTest or WinRunner client to a specific concurrent license server. (You can specify the license server by either host name or IP address.) For information on setting this variable, see “Setting the LSHOST or LSFORCEHOST Variable” on page 44.
LSHOST variable	Specifies the preferred concurrent license server for a QuickTest or WinRunner client. If the specified concurrent license server cannot be found, then a search is conducted on the entire network. Use this variable in order to contact a server in a remote subnet. For information on setting this variable, see “Setting the LSHOST or LSFORCEHOST Variable” on page 44.

Displaying Current Concurrent License Server Users

You can run the LSMON utility on a client computer (running QuickTest or WinRunner, and connected to the concurrent license server) or the host computer (the concurrent license server).

The LSMON utility is a DOS-based program that displays:

- ▶ the maximum number of concurrent QuickTest or WinRunner users allowed.
- ▶ the number of computers currently connected to the concurrent license server.
- ▶ the IDs of the computers currently connected to the concurrent license server.
- ▶ the number of licenses currently not in use.

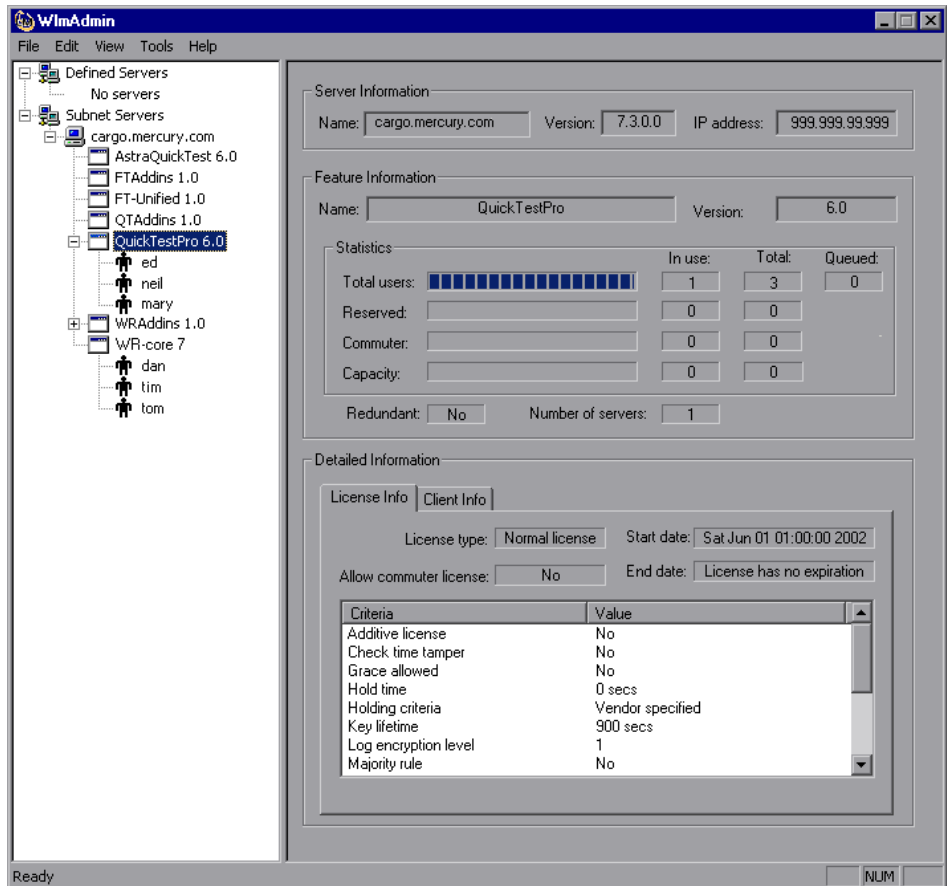
Note: To run the LSMON utility from a client computer and display information for all the computers in the network, type LSMON <license server host name>.

Displaying License Servers

You can run the LSWHERE utility on a client computer (running QuickTest or WinRunner, and connected to the concurrent license server) or the host computer (the concurrent license server). It is a Windows-based program that displays the network names of all computers running the Mercury Functional Testing Concurrent License Server.

Monitoring License Servers

You can run the WLMADMIN utility on a client computer (running QuickTest or WinRunner, and connected to the concurrent license server) or the host computer (the concurrent license server). It enables you to monitor license server transactions for each Mercury product connected to the server and provides information on license servers, users, and computers running Mercury products using concurrent licenses. You can use this utility to monitor license server activity.



Note that in the above example, QuickTest and WinRunner share the same concurrent license server.

Note: The feature (license) names indicate the earliest supported version. For example, the feature **QuickTestPro 6.0** supports QuickTest Professional, version 6.0 and later; the feature **WR-core 7** supports WinRunner 7.0 and later.

Understanding How the License Server Determines the Type of License to Issue

When a user opens a QuickTest or WinRunner client that is set to work with a concurrent license, the client sends a license request to the concurrent license server. If the concurrent license server has multiple licence types available, for example, **FT-Unified 1.0**, **QuickTestPro 6.0**, and **WR-core 7**, the functional testing tool applies program logic to determine the license type to request for this session. The license type may be product-specific, such as **QuickTestPro 6.0** or **WR-core 7**, or global and applicable to both QuickTest and WinRunner—**FT-Unified 1.0**.

The first time a QuickTest or WinRunner client sends a request to the concurrent license server, it requests a product-specific license. If that license type is available, the concurrent license server issues it. If that license type is unavailable, the functional testing tool requests a global license. If no license is available, the functional testing tool displays a message indicating that all licenses are in use.

For subsequent sessions, the functional testing tool always requests the same type of license that was issued during the previous session. If that license type is unavailable, the functional testing tool requests the alternate license type.

For example, if the last time that the QuickTest client connected to the license server it was issued a **QuickTestPro 6.0** license, it requests the same license type again. If no **QuickTestPro 6.0** license is available, it requests an **FT-Unified 1.0** license.

Similarly, if the last time that the WinRunner client connected to the license server, it was issued an **FT-Unified 1.0** license, it requests the same license type again. If no **FT-Unified 1.0** license is available, it requests a **WR-core 7** license.

Setting the LSHOST or LSFORCEHOST Variable

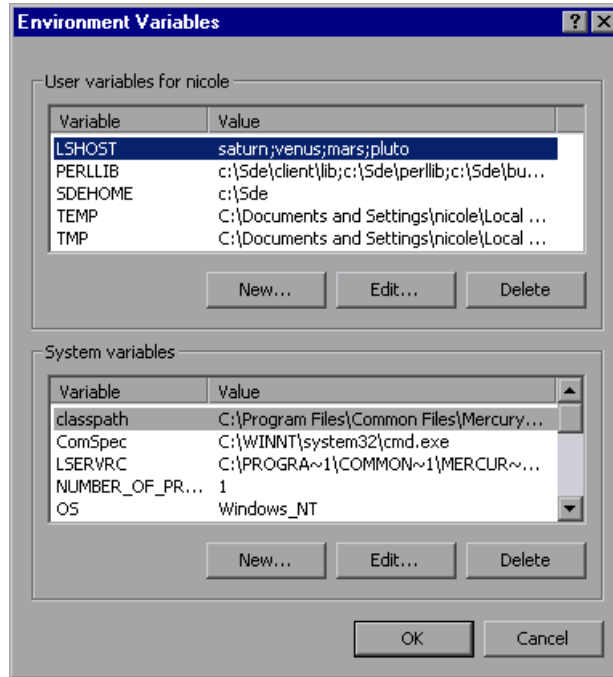
In addition to using the License Wizard to specify the concurrent license server to which you want QuickTest or WinRunner to connect, you can also specify a concurrent license server using Windows Environment variables. For example, you can use the LSHOST variable to set the preferred concurrent license server for a QuickTest client. If the specified concurrent license server cannot be found in the local subnet, then a search is conducted on the entire network. Alternatively, you can use the LSFORCEHOST variable to restrict QuickTest or WinRunner to a specific concurrent license server. The LSFORCEHOST variable restricts QuickTest or WinRunner to a specific concurrent license server. The LSHOST and LSFORCEHOST variables are described on page 40.

You may need to set the LSHOST or LSFORCEHOST variable if the Mercury Functional Testing Concurrent License Server is installed on a different domain or subnet than the QuickTest or WinRunner clients, as described in “Known Problems and Workarounds” on page 29.

Note: If you installed a concurrent license using the License Wizard, the LSHOST user variable is already defined with the concurrent license server you specified.

To set the LSHOST or LSFORCEHOST variables:

- 1 Open the Environment Variables dialog box. (Choose **Start > Settings > Control Panel > System**. In the System Properties dialog box, click the **Advanced** tab. Then click the **Environment Variables** button. The Environment Variables dialog box opens.).



Note: If the concurrent license server is already defined using an LSHOST or LSFORCEHOST system variable, you do not need to define it using the user variable.

- 2 Under **User variables for <user name>**, click **New**. The New User Variable dialog box opens.
- 3 In the **Variable Name** box, type LSHOST or LSFORCEHOST.

- 4** In the **Variable Value** box, type the full name of the concurrent license server. Alternatively, you can enter the IP address of the host computer.

Notes:

The LSHOST and LSHOSTFORCE environment variable values are limited to 64 characters.

For multiple host names (i.e., where there are Mercury Functional Testing Concurrent License Servers running on one network), use a semicolon (;) to separate the hosts' names or IP addresses in the Value box.

- 5** Click **OK** to close the New User Variable dialog box.
- 6** Click **OK** to close the Environment Variables dialog box.
- 7** Click **OK** to close the System Properties dialog box.

6

Uninstalling a Concurrent License Server

You can uninstall the concurrent license server, if needed.

If you uninstall a concurrent license server, computers that previously used concurrent licenses from this server will not be able to run their QuickTest or WinRunner clients. To run a QuickTest or WinRunner client, you must install a seat license on each QuickTest and WinRunner computer, or set up the computers to access a different concurrent license server. For more information about changing a concurrent license to a seat license, refer to the *QuickTest Professional Installation Guide* or the *WinRunner Installation Guide*.

If you want to uninstall the license server in order to reinstall it on a different computer, contact Mercury Interactive Customer Support to receive a new license key that matches the locking code for the computer on which you want to install the license server.

To uninstall the concurrent license server:

- 1 Save the **lservrc** file to a backup location. The location of the **lservrc** file depends on whether QuickTest is currently installed.
 - If QuickTest is installed, the file location is specified by the **lservrc** environment variable.

Tip: To find the path of **lservrc** environment variable, right click **My Computer** and choose **Properties**. In the System Properties dialog box, select the **Advanced** tab, and then click **Environment Variables**. The path is displayed in the **User variables for <user>** box of the Environment Variables window for the **LSERVRC** variable. For example, C:\Program Files\Common Files\Mercury Interactive\License Manager\lservrc.

- ▶ If QuickTest is not installed, the file is located in the same folder as **lservnt.exe**. By default, this is C:\Program Files\Common Files\SafeNet Sentinel\Sentinel LM Server\WinNT\lservnt.exe.
-

Tip: To find the location of **lservnt.exe**, choose **Start > Settings > Control Panel > Administrative Tools > Services**. In the Services dialog box, right click **Sentinel LM** and choose **Properties**. The path for **lservnt.exe** is displayed in the **Path to executable** box.

2 Click **Start > Settings > Control Panel > Add/Remove Programs**.

The Add/Remove Programs dialog box opens.

3 Choose **Sentinel LM Server 8.x.x** and click **Remove**.

4 Follow the displayed instructions.

Note: You can also uninstall the concurrent license server using the uninstall utility located on the Mercury Functional Testing Concurrent License Server CD-ROM for your current installation. Do not use the CD-ROM for any other version of the license server, as this may cause unexpected behavior.
