

HP Functional Testing Concurrent License Server

For the Windows[®] operating systems

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Installation Guide

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Contents

Contents	3
About the HP Functional Testing Concurrent License Server Installation Guide	4
HP UFT Guides and References	4
Additional Online Resources	6
Chapter 1: Before You Install	8
Chapter 2: Setting Up the Concurrent License Server with a Concurrent License	9
Installing the Concurrent License Server	10
Upgrading the Concurrent License Server	12
Requesting a Concurrent License Key	13
Installing a Concurrent License Key	15
Redundant License Servers	18
Transferring a Concurrent License Server to a Different Network Computer	19
Chapter 3: Concurrent License Server Tips and Tricks	20
Chapter 4: Concurrent License Server Error Codes	23
Chapter 5: Concurrent License Server Utilities	25
Overview	26
Displaying Current Concurrent License Server Users	29
Displaying License Servers	30
Monitoring License Servers	31
Setting the LSHOST or LSFORCEHOST Variable	32
Troubleshooting and Limitations - Working with the LSHOST and LSFORCEHOST Variables	34
Chapter 6: Uninstalling a Concurrent License Server	35
We appreciate your feedback!	38

About the HP Functional Testing Concurrent License Server Installation Guide

The *HP Functional Testing Concurrent License Server Installation Guide* provides the information you need to install and maintain the HP Functional Testing Concurrent License Server.

Prerequisite Background

This guide is intended for users who need to install, set up, and maintain an HP Functional Testing Concurrent License Server. Readers of this guide should have some knowledge of system administration.

HP UFT Guides and References

The following tables provide a list of the UFT guides, online help and references:

Note: To check for recent updates of any of the guides below, visit the HP Software Product Manuals Web site (<http://h20230.www2.hp.com/selfsolve/manuals>).

Getting started

Reference	Description
What's New?	Describes the newest features in the latest version of Functional Testing Concurrent License Server. You can also access the What's New from the Functional Testing Concurrent License Server Help menu.
Product Movies	Click the link or select Help > Product Feature Movies to view short movies that demonstrate the main product features.
Readme	Provides last-minute news and information about Functional Testing Concurrent License Server. For the latest readme file, go to the HP Software Manuals Web site (requires an HP Passport) at http://support.openview.hp.com/selfsolve/manuals .
UFT PAM	The Product Availability Matrix (PAM) provides current information about technologies and integrations supported for this version of Concurrent License Server.
GUI Testing Tutorial	The GUI Testing Tutorial is a self-paced printable guide, designed to lead you through the process of creating GUI tests and familiarize you with the testing environment.
API Testing Tutorial	The API Testing Tutorial is a self-paced printable guide, designed to lead you through the process of creating API tests in the Windows environment.

PDF guides

Guide	Description
UFT User Guide	The HP Functional Testing Concurrent License Server User Guide describes how to use Concurrent License Server to test your applications. It provides step-by-step instructions to help you create, debug, and run tests, and report defects detected during the testing process.
Run Results Viewer	The HP Run Results Viewer User Guide explains how to use the Run Results Viewer to interpret and use the test results from your GUI or API tests.
UFT Installation Guide	The HP Functional Testing Concurrent License Server Installation Guide provides a complete, step-by-step instructions on how to install and set up Concurrent License Server on a standalone computer.
UFT QuickStart	The Concurrent License Server Installation QuickStart Sheet explains the steps to perform a basic installation of Concurrent License Server.
License Server Installation Guide	The Concurrent License Server Installation Guide provides the information you need to install and maintain the HP Functional Testing Concurrent License Server.
UFT Add-ins Guide	The HP Functional Testing Concurrent License Server Add-ins Guide explains how to set up support for Concurrent License Server add-ins and standard Windows testing support. Add-ins enable you to test any supported environment using GUI tests and business components.

References

Links to the references are available from the UFT online help home page.

Reference	Description
Object Model Reference	The Object Model Reference for GUI Testing includes a description, a list of methods and properties, syntax, examples, and identification properties for each Concurrent License Server test object.
VBScript Reference	Microsoft's Visual Basic Scripting documentation that describes objects, methods, properties, functions, and other elements that can be used when writing VBScript scripts.
Automation Object Model Reference	List the objects, methods, and properties that enable you to control Concurrent License Server from within another application.

Reference	Description
Object Repository Automation Reference	Describes the objects that enable you to manipulate Concurrent License Server shared object repositories and their contents from outside of Concurrent License Server.
Run Results Schema Reference	Provides details about the structure of the Run Results XML schema, and describes the elements and attributes used in the its XML reports.
Test Object Schema Reference	A reference describing the elements and attributes available for creating test object configuration XML content, for use when creating Concurrent License Server extensibility projects.
Object Repository Schema Reference	Describes the elements and complex types defined for the object repository schema.

Additional Online Resources

The following additional online resources are available from the Functional Testing Concurrent License Server Help menu:

Resource	Description
HP Software Support Online	<p>Opens the HP Software Support Web site. This site enables you to browse the HP Software Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose Help > HP Software Support. The URL for this Web site www.hp.com/go/hpssoftwaresupport.</p> <ul style="list-style-type: none"> • Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. • To find more information about access levels, go to: http://h20230.www2.hp.com/new_access_levels.jsp • To register for an HP Passport user ID, go to: http://h20229.www2.hp.com/passport-registration.html

Resource	Description
Testing Forums	<p>Opens the testing forums for GUI Testing, API Testing, and BPT Testing forums. where you can interact with other users of UFT and discuss topics related to GUI Testing, API Testing, and BPT.</p> <p>The URLs for these sites are:</p> <ul style="list-style-type: none"> • API Testing: http://h30499.www3.hp.com/t5/Service-Test-Support-and-News/bd-p/sws-Serv_TEST_SF • BPT: http://h30499.www3.hp.com/t5/Business-Process-Validation/bd-p/sws-BPT_SF
Concurrent License Server Product Page	Opens the HP Functional Testing Concurrent License Server product page, with information and related links about Concurrent License Server.
Troubleshooting & Knowledge Base	Opens the Troubleshooting page on the HP Software Support Web site where you can search the HP Software Self-solve knowledge base. Choose Help > Knowledge Base or Help > Troubleshooting . The URL for the troubleshooting Web site is http://h20230.www2.hp.com/troubleshooting.jsp .
HP Software Community	Opens the HP IT Experts Community site, where you can interact with other HP software users, read articles and blogs on HP software and access downloads of other software products.
HP Manuals Site	Opens the HP Software Product Manuals Web site, where you can search for the most up-to-date documentation for a selected HP Software product. The URL for this Web site is http://support.openview.hp.com/selfsolve/manuals (requires an HP Passport).
What's New	Opens the Concurrent License Server What's New Help, describing the new features and enhancements in this version of Concurrent License Server.
Product Movies	Opens a page on HPLN (HP Live Networks) displaying a list of all product movies.
HP Software Web site	Opens the HP Software Web site. This site provides you with the most up-to-date information on HP Software products. This includes new software releases, seminars and trade shows, customer support, and more. The URL for this Web site is www.hp.com/go/software .

You can access the following sample applications from the **Start** menu. These applications are the basis for many examples in this guide:

Chapter 1: Before You Install

To successfully install and run the HP Functional Testing Concurrent License Server, your computer must meet the **minimum** system requirements shown below. However, performance may be improved by using systems with stronger/later setups than the minimum requirements.

For a list of all supported operating systems for the Concurrent License Server, see the *HP Unified Functional Testing Product Availability Matrix*, available from the root folder of the installation DVD. The most up-to-date Product Availability Matrix is available from the HP Software Product Manuals site, at <http://h20230.www2.hp.com/selfsolve/manuals> (requires an HP Passport).

Computer/Processor	An IBM-PC or compatible with a Pentium III 550 MHz or higher microprocessor
Operating System	Windows 2000 or higher
Memory	A minimum of 256 MB of RAM
Free Hard Disk Space	10 MB of free disk space
Accessories	DVD drive (If you install from a local drive)
Protocols	TCP/IP

Note: The information in this section is up-to-date at the time of this release. See http://www.hp.com/go/uft_sysreq page for the most update supported system configurations.

Chapter 2: Setting Up the Concurrent License Server with a Concurrent License

You can use Concurrent License Server with two types of licenses: **seat** and **concurrent**. A **seat** license is a per-computer license. A **concurrent** license is a per-session license that is available only if your company has an HP Functional Testing Concurrent License Server, your computer has access to that server, and a concurrent license is available for your use. This guide describes how to install the HP Functional Testing Concurrent License Server and a concurrent license key.

You must also install the relevant product, using the concurrent license option, on each computer on which you want to run the product. When you install a concurrent license, you can install the product client on as many computers as you want. However, the HP Functional Testing Concurrent License Server regulates the number of copies of the product that are allowed to run concurrently based on your concurrent license key. You can increase the number of copies that you can run at the same time by purchasing additional licenses from HP.

To connect to the Concurrent License Server from UFT, you must install a valid license key on the concurrent license server. A demo license option is not available for the HP Functional Testing Concurrent License Server.

This chapter includes:

Installing the Concurrent License Server	10
Upgrading the Concurrent License Server	12
Requesting a Concurrent License Key	13
Installing a Concurrent License Key	15
Redundant License Servers	18
Transferring a Concurrent License Server to a Different Network Computer	19

Installing the Concurrent License Server

Installing the HP Functional Testing Concurrent License Server installs the Sentinel RMS License Manager Server version 8.4.0. For more details on the Sentinel RMS License Manager Server, see the *Sentinel RMS License Manager System Administrator's Help* located in the LicenseServer\server\SysAdminHelp folder of the UFT or Service Test installation DVD. (Open the default.htm file to access the help.)

Note: If a previous version of the concurrent license server is already installed on the computer, you must upgrade the concurrent license server by performing specific steps. For more details, see "[Upgrading the Concurrent License Server](#)" on page 12.

Prerequisites

- 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:

- a. On another network computer, click **Start > Run**.
- b. In the **Run** box, type ping <name of the computer where the license server will be installed>. and click **OK**.

If the first computer can identify the second computer on the network, an MS-DOS window opens and four successful reply messages are displayed. 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 install the concurrent license server, the server must be running whenever you use UFT on the client computer.

To install the concurrent license server:

1. In the UFT Setup window, click **License server Setup**. The Concurrent License Server installation window opens.
2. In the Concurrent License Server window, click **Install the HP Functional Testing Concurrent License Server**.

The Sentinel RMS License Manager Server setup program starts and the Sentinel RMS License Manager Welcome screen opens.

3. Follow the steps in the wizard to complete your installation.

Note: If you are installing the license server on an operating system that has an enabled system firewall, for example, Windows XP Service Pack 2), the wizard displays the **System Firewall Settings Need To Be Modified** screen, indicating that you need to modify the computer's firewall settings.

In this screen, select the **Unblock the system firewall for the Sentinel RMS License Manager** check box to enable communication between the Concurrent License Server and the network clients. If you clear the check box, computers running UFT using a concurrent license cannot access the concurrent license server.

After you install the concurrent license server, you must request and install the Concurrent Server License key before you can use UFT. There is no concurrent demo license available for the Concurrent License Server.

Upgrading the Concurrent License Server

UFT supports the Sentinel RMS License Manager version 8.4.0 as its concurrent license server. If you are upgrading to UFT with a concurrent license, you must also upgrade your concurrent license server.

You must have administrator privileges when upgrading the concurrent license server.

To upgrade the concurrent license server:

1. Manually stop the Sentinel LM service. Select **Start > Settings > Control Panel > Administrative Tools > Services**. In the Services dialog box, right-click **Sentinel LM License Manager** and select **Stop**.
2. Save the `lservrc` file to a backup location. The `lservrc` file is located either in the folder in which the Sentinel LM License Manager server is currently installed, for example, `%CommonProgramFiles%\SafeNet Sentinel\ LM License Manager Server\WinNT`, or in the location specified by the **lservrc** environment variable.

Tip: To find the path of **lservrc** environment variable, right-click **My Computer** and select **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, `%CommonProgramFiles%\HP\License Manager\lservrc`.

3. Install the Sentinel RMS License Manager version 8.4.0 on the license server computer. The license server installation upgrades the license server to the new version. For more details, see ["Installing the Concurrent License Server" on page 10](#).
4. After installation, copy the `lservrc` file that you backed up to the following location, depending on whether your product is installed:
 - If the product is installed, copy the file to the location specified by the **lservrc** environment variable.
 - If the product is not installed, copy the `lservrc` file to the same folder as the `lservnt.exe` file, for example, `%CommonProgramFiles%\SafeNet Sentinel\ RMS License Manager Server\WinNT\lservnt.exe`.

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

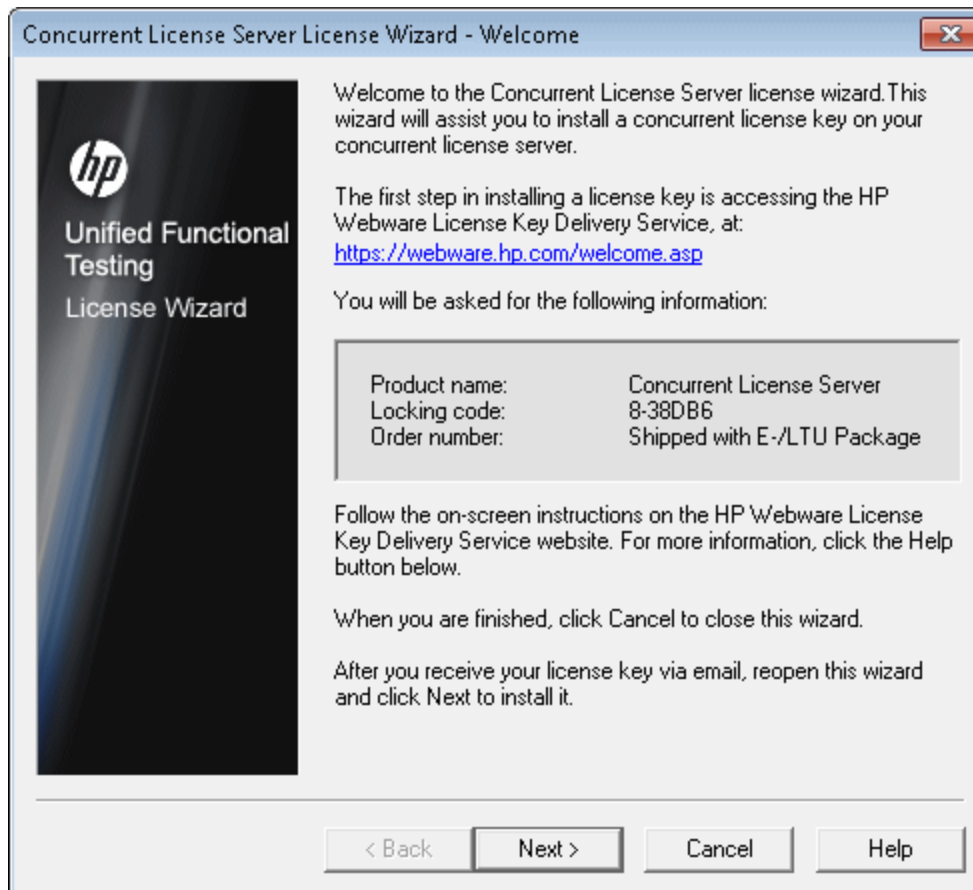
Requesting a Concurrent License Key

After the concurrent license server is installed, you must run the Concurrent License Server license installation program to request your license key from HP. You 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. In the UFT Setup window, click **License server Setup**. The Concurrent License Server installation window opens.
2. In the Concurrent License Server window, click **Install a Concurrent License Key**.

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 the link on the Concurrent License Server Wizard - Welcome screen for the **HP Webware License Key Delivery Service** to request your license key. Follow the instructions as described in "[Requesting a License Key via the HP Webware License Key Delivery Service](#)" on the next page.

4. If you already have your license key, proceed to step 4 in the ["Installing a Concurrent License Key"](#) section.

Requesting a License Key via the HP Webware License Key Delivery Service

The HP Software Licensing Portal assists you in requesting a license key.

For details on the various areas of the portal, see the links under the **Resources** section on the left side of the Web page, such as the tutorial or the how-to demos.

Request your license key as described in the HP Software License Activation Quick Start Guide, available from the **Resources** area of the HP Software Licensing Portal.

Click **Cancel** and wait for your Permanent Password Certificate to arrive by e-mail. When the certificate arrives, follow the instructions as described in ["Installing a Concurrent License Key" on the next page](#).

Installing a Concurrent License Key

After you receive your license key from HP, you must run the Concurrent License Server license installation program again to install the key. The license key is included in the .dat file attached to the e-mail containing your Permanent Password Certificate. The concurrent license key must be installed on the computer on which you installed the concurrent license server.

Caution:

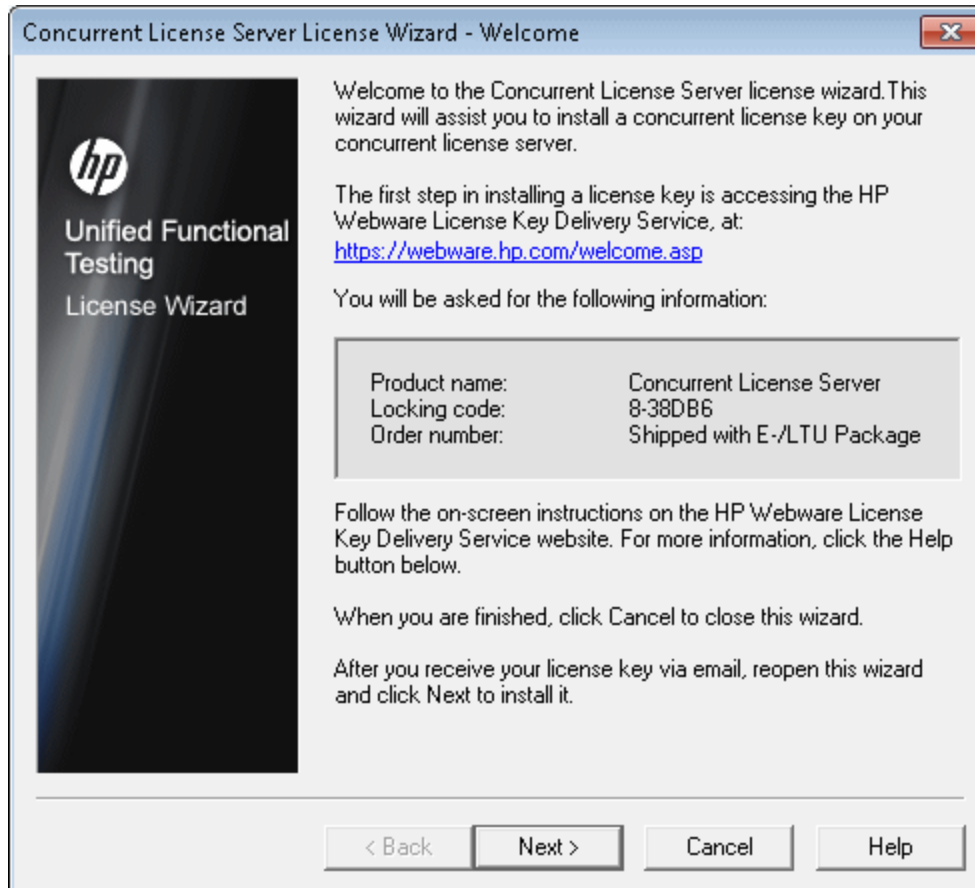
- You cannot install a concurrent license key remotely (for example, using Symantec pcAnywhere, Citrix, or Terminal Server).
- After installing the concurrent license key, do not change your computer's date or time. This triggers a **Clock Tamper** lock on the license information, preventing you from using the license.

To install your concurrent license key:

1. Run the Concurrent License Server Setup program again.
2. In the Unified Functional Testing Setup window, select **License Server Setup**. The Functional Testing Concurrent License Server setup screen opens.

3. In the Functional Testing Concurrent License Server, 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.



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 submitted to HP.

4. Enter the license key into the License Installation - License Key screen and click Next. The Install Summary screen opens

5. In the Install Summary screen, verify the installation details and click **Next** to install the license.

After the License is installed, the Finish screen is displayed. Click Finish and restart the Concurrent License Server to start using the license.

Note: 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.

Redundant License Servers

Redundant license servers provide failover, so that if the main license server fails, the remaining servers maintain availability of the licenses without causing any downtime or loss of licenses for users. The redundant license server feature is useful for enterprise customers who have a large network installation and want to maintain license server backup.

When you work with redundant license servers you request a concurrent license key for your primary license server, and that license key is used for all your backup license servers.

For more details on deploying redundant license servers, see the section on **Setting up Redundant License Servers** in the **Sentinel RMS Kit System Administrator's Help**, located on your installation DVD at `\LicenseServer\server\SysAdminHelp\Default.htm`.

Note:

- You must have a minimum of 3, and can have a maximum of 11 redundant servers to work with redundant license servers.
- HP requires that you use **Majority Rule** when deploying redundant servers. **Majority Rule** means that a request for a license will be filled only if a majority of the redundant license servers are running.

For example, if you have defined ten redundant license servers and majority rule is in effect, at least six of them must be running for a request for that license to be served.

For more details, search for **Majority Rule** in the **Sentinel RMS Kit System Administrator's Help**, located on your installation DVD at `\LicenseServer\server\SysAdminHelp\Default.htm`.

To request a redundant license server key:

1. Access the Webware HP License Key Delivery Service at www.webware.hp.com.
2. Under the **Support** section, click **Contact license delivery center**.
3. Contact one of the regional license delivery centers listed and request a **failover/hot standby** license.
4. A member of the support team will contact you for more information. You will be asked to supply the locking codes for all the backup servers you want to use.

Transferring a Concurrent License Server to a Different Network Computer

You may want to transfer your HP Functional Testing Concurrent License Server from one network computer to another.

To transfer your license server to a different computer:

1. Run the UFT installation program to install the concurrent license server on the new computer, as described in ["Installing the Concurrent License Server" on page 10](#).
2. Run the UFT license installation program, and request a concurrent license key, as described in ["Requesting a Concurrent License Key" on page 13](#). In your request, indicate that you are transferring your existing license server to a new computer.
3. After you receive and install your new concurrent license key on the new network computer, uninstall the concurrent license server from the old network computer.

Chapter 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.

You can use the following tips and tricks to assist you in using the Concurrent License Server:

- ["General Tips" below](#)
- ["Stopping and Restarting the Concurrent License Server" below](#)
- ["Locking Codes" on the next page](#)
- ["Other Known Problems and Workarounds" on the next page](#)

General Tips



When the client computers running UFT are on multiple domains, you should install a license server on each domain.

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:

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 RMS License Manager** and click **Stop Service**  .
4. To restart the license server, highlight **Sentinel RMS License Manager** and click **Start Service**  .

Tips:

You can highlight **Sentinel RMS License Manager** 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 details, see page 27.

Locking Codes

A locking code is a unique identification number generated for 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.

Other Known Problems and Workarounds

Problem	Workaround
<p>The concurrent license server is installed on a different domain/subnet than the UFT or Service Test clients.</p>	<p>Open UDP port 5093 between domains. Set the LSHOST or LSFORCEHOST parameters on the UFT or Service Test client computers. For more details, see "Setting the LSHOST or LSFORCEHOST Variable" on page 32.</p> <p>To check the connection, use <code>ping -a</code> from the Windows command line.</p> <p>If this is successful, the command line should display: Reply from <server i.p. address> : <byte size> < time >.</p>
<p>You want to install concurrent license servers on Novell or Unix computers.</p>	<p>The concurrent license server software does not support Novell or Unix. Generate a seat license key for each UFT or Service Test client computer. Alternatively, use a Windows platform network computer as your concurrent license server.</p>
<p>Although you have a legal license key installed on your concurrent license server, you cannot start UFT or Service Test.</p>	<p>If you install UFT or Service Test using the <code>setup.exe</code> file instead of the autorun screen, it automatically installs UFT or Service Test with the seat license option. In the message box that opens when you try to open UFT or Service Test, click Install License. This opens the License Installation utility, which enables you to change your license type to the concurrent license option.</p>
<p>You 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.</p>	<p>Restore the computer's clock to the original date and contact HP Software Support for further assistance.</p>

Problem	Workaround
<p>You are installing a concurrent license key from a network location, and you cannot access the Help by clicking the Help button or pressing F1.</p>	<p>The help topics that describe the wizard user interface are provided in a CHM file. CHM files cannot be opened from a network location.</p> <p>To view the help topics, do one of the following:</p> <ul style="list-style-type: none">• Copy the CHM file located in <LicenseServer_Path>\help\FTCLS_License.chm to a local drive and open the file to access the Help.• View the help topics in PDF format, located in <LicenseServer_Path>\UFT_LicSvr.pdf.

Chapter 4: Concurrent License Server Error Codes

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

You can receive the following error codes for the Concurrent License Server:

Error 5

Message: The concurrent license server has stopped.

Workaround: Select **Start > Programs > Administrative Tools > Services**. Locate the Sentinel RMS License Manager service and click **Start**.

If the license server does not start, contact HP Software Support for assistance.

Note: For details on accessing Concurrent License Server and Concurrent License Server tools and files in Windows 8, see "[Accessing Concurrent License Server in Windows 8 Operating Systems](#)" on page 37.

Error 19: Cannot install a license code

Error 19 can occur in the following 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

Possible Causes	Possible Solutions
The license key is node-locked and does not match the locking code of the computer where the license server is being installed.	Contact HP Software Support to reissue the license with the correct license key.

Possible Causes	Possible Solutions
When you try to install a seat license, the license key is for a concurrent license.	Copy <code>lsdecode.exe</code> from the <code>LicenseServer\utils</code> folder on the UFT or Service Test installation DVD to <code>Program Files\Common Files\HP\License Manager</code> and run the <code>lsdecode.exe</code> file. This displays the license key information, which enables you to verify that you are installing the correct license type.
The license key was entered incorrectly.	Copy <code>lsdecode.exe</code> from the <code>LicenseServer\utils</code> folder on the UFT or Service Test installation DVD to <code>Program Files\Common Files\HP\License Manager</code> and run the <code>lsdecode.exe</code> file. This displays the license key information, which enables you to verify that you are installing the correct license key.
The license key is already installed.	<p>Check whether the <code>lservrc</code> file exists. The location of the file depends on whether your product is currently installed.</p> <ul style="list-style-type: none"> If the product is installed, the location of the file is specified by the lservrc environment variable. <div data-bbox="607 884 1370 1163" style="background-color: #f0f0f0; padding: 5px; margin: 5px 0;"> <p>Tip: To find the path of lservrc environment variable, right-click My Computer and select 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, <code>%CommonProgramFiles%\HP\License Manager\lservrc</code>.</p> </div> If the product is not installed, the file is located in the same folder as <code>lservnt.exe</code>. By default, this is <code>%CommonProgramFiles%\SafeNet Sentinel\RMS License Manager Server\WinNT\</code>. <div data-bbox="607 1329 1370 1539" style="background-color: #f0f0f0; padding: 5px; margin: 5px 0;"> <p>Tip: To find the path of <code>lservnt.exe</code>, select Start > Settings > Control Panel > Administrative Tools > Services. In the Services dialog box, right-click Sentinel RMS License Manager and select Properties. The path for <code>lservnt.exe</code> is displayed in the Path to executable box.</p> </div> <p>If the <code>lservrc</code> file exists, the license key is installed already. You may use the license server.</p>

Chapter 5: Concurrent License Server Utilities

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

For more details about the utilities described in this chapter, see the *Sentinel RMS License Manager System Administrator's Help* located in the `LicenseServer\server\SysAdminHelp` folder of the UFT installation DVD. (Open the `index.html` file to access the help.)

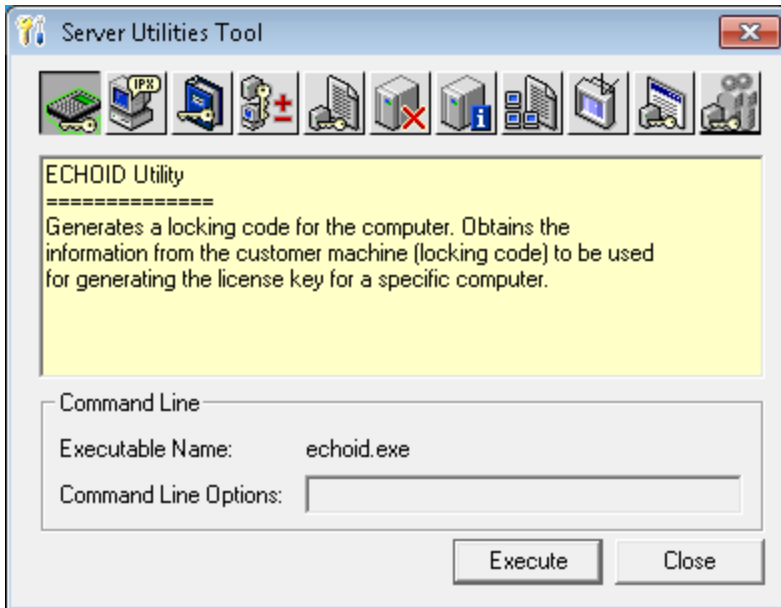
This chapter includes:

Overview	26
Displaying Current Concurrent License Server Users	29
Displaying License Servers	30
Monitoring License Servers	31
Setting the LSHOST or LSFORCEHOST Variable	32
Troubleshooting and Limitations - Working with the LSHOST and LSFORCEHOST Variables	34

Overview

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

You can start HP Functional Testing server management utilities from a Windows user interface by running `SrvUtils.exe` in the `LicenseServer\utils` folder of the UFT or Service Test installation DVD.



To run a utility:

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

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

Utility	Description/Example of Usage
ECHOID Utility <code>echoid.exe</code>	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 <code>ipxecho.exe</code>	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
<p>LSDECODE Utility</p> <p>lsdecode.exe</p>	<p>Displays the license key information, which enables you to check that you are installing the correct license type.</p> <p>It decodes an HP Functional Testing concurrent license key (lservrc) 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 lservrc file.</p>
<p>LSLIC Utility</p> <p>lslic.exe</p>	<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 an HP 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 lservrc file.</p>
<p>LSMON Utility</p> <p>lsmon.exe</p>	<p>Monitors an HP Functional Testing Concurrent License Server computer.</p> <p>You can run the LSMON utility on a client computer (running UFT, and connected to a concurrent license server) or the host computer (the license server).</p> <p>To monitor a remote HP Functional Testing Concurrent License Server, specify <host name> or <IP address>. For example, c:\lsmon.exe saturn monitors the saturn host. For more details on this utility, see "Displaying Current Concurrent License Server Users" on page 29.</p>
<p>LSRVDOWN Utility</p> <p>lsrvdwn.exe</p>	<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 details, see "Stopping and Restarting the Concurrent License Server" on page 20.</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> <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p>Example</p> <pre>lsusage.exe -l Usage-log-file [-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)]]]</pre> </div>
<p>LSWHERE Utility lswhere.exe</p>	<p>Searches for HP 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 UFT) that is connected to a concurrent license server, or the host computer (the license server). The parameter <code>-<IP address></code> searches for a specific network host.</p> <p>For more details on this utility, see "Displaying License Servers" on page 30.</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 HP Functional Testing Concurrent License Server transactions and provides information on license servers, users, and computers running UFT using a concurrent license server. You can use this utility to check that an HP Functional Testing Concurrent License Server is running, and to monitor its usage.</p> <p>For more details on this utility, see "Monitoring License Servers" on page 31.</p>
<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>

Utility	Description/Example of Usage
WCommute.exe	<p>Enables a concurrent license user to check out and check in a commuter license for UFT (either on the local computer or on a remote computer). A commuter license enables concurrent license users to temporarily use UFT on a computer that is temporarily not connected to the network.</p> <p>For more details on this utility, see the <i>HP Unified Functional Testing Installation Guide</i>.</p> <p>This utility can be activated only from the command line, and not from within the Server Utilities Tool window.</p>
WRCommute.exe	<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 Concurrent License Server or Service Test.</p> <p>For more details on this utility, see the <i>HP Unified Functional Testing Installation Guide</i>.</p> <p>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 UFT or Service Test client computers to designate or control which concurrent license server(s) can be used:

Utility	Description/Example of Usage
LSFORCEHOST variable	<p>Restricts a UFT client to a specific concurrent license server. (You can specify the license server by either host name or IP address.) For details on setting this variable, see "Setting the LSHOST or LSFORCEHOST Variable" on page 32.</p>
LSHOST variable	<p>Specifies the preferred concurrent license server for a UFT client. If the specified concurrent license server cannot be found, then a search is conducted on the entire network. Use this variable to contact a server in a remote subnet. For details on setting this variable, see "Setting the LSHOST or LSFORCEHOST Variable" on page 32.</p>

Displaying Current Concurrent License Server Users

You can run the LSMON utility on a client computer (running UFT) that is connected to a concurrent license server, or to the host computer (the concurrent license server).

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

- the maximum number of concurrent UFT 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.

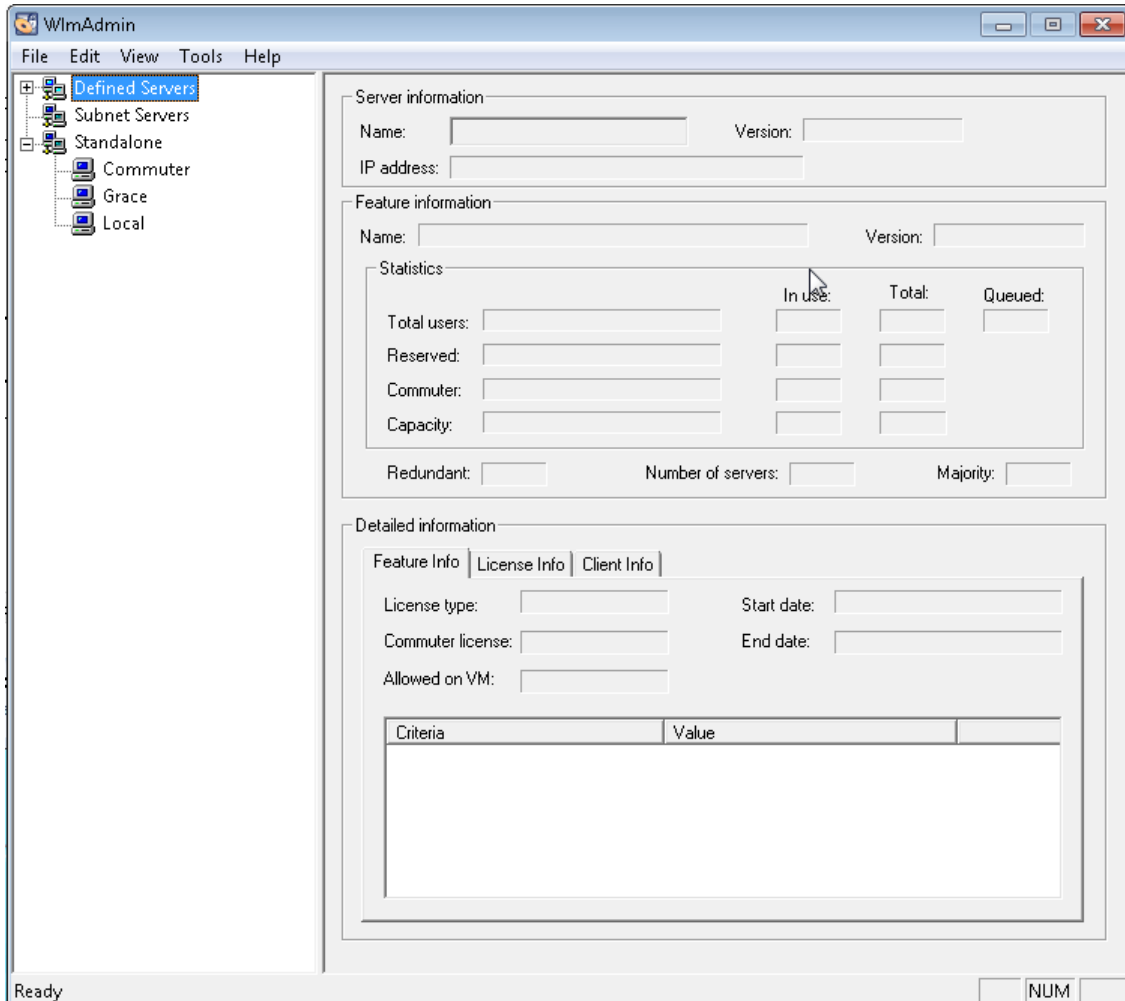
Note: To run the LSMON utility from a client computer and display information for all the computers in the network, type `LSMON <license server host name>`.

Displaying License Servers

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

Monitoring License Servers

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



Note:

- The feature (license) names indicate the earliest supported version. For example, the feature **QuickPro 6.0** supports QuickTest Professional, version 6.0 and later.
- When assigning licenses from a pool of different license types, the license server selects the most inclusive license.

Setting the LSHOST or LSFORCEHOST Variable

In addition to using the License Wizard to specify the concurrent license server to which you want UFT 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 UFT client. If the specified concurrent license server cannot be found in the local subnet, then a search is conducted on the entire network.

You can use the LSFORCEHOST variable to restrict UFT to a specific concurrent license server. The LSHOST and LSFORCEHOST variables are described on page 29.

You may need to set the LSHOST or LSFORCEHOST variable if the HP Functional Testing Concurrent License Server is installed on a different domain or subnet than the UFT clients, as described in "[Other Known Problems and Workarounds](#)" on page 21.

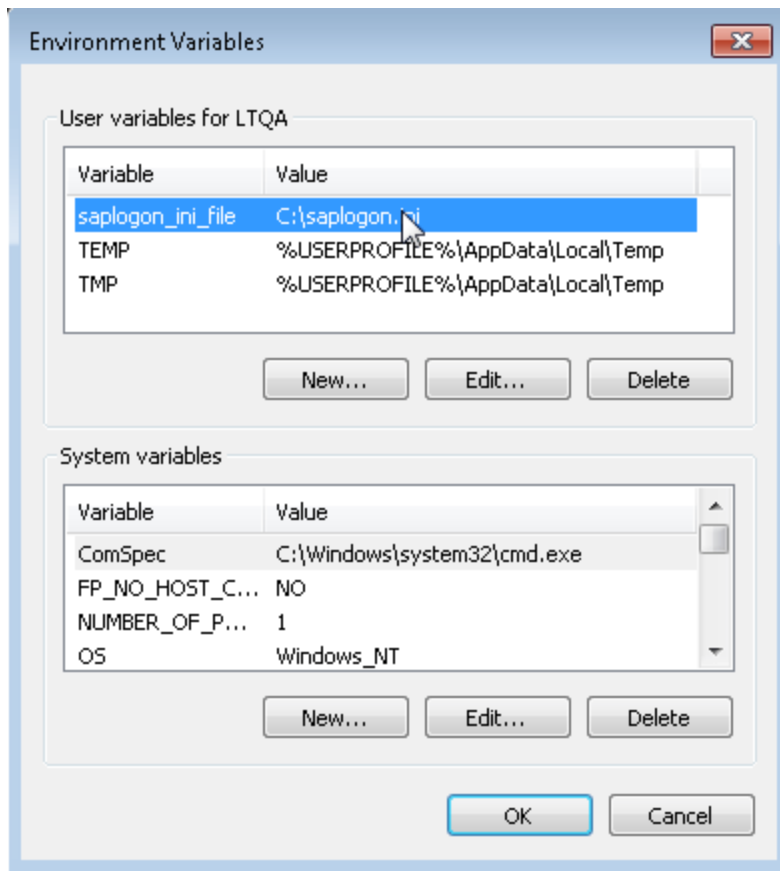
For troubleshooting information, see "[Troubleshooting and Limitations - Working with the LSHOST and LSFORCEHOST Variables](#)" on page 34.

Note:

- If you installed a concurrent license using the License Wizard and specified a single server name, the LSFORCEHOST user variable is already defined with the concurrent license server you specified.
- The LSFORCEHOST variable instructs the product to check for available licenses only in the specified server name. To check for available licenses in multiple servers, you must set the LSHOST variable.

To set the LSHOST or LSFORCEHOST variables:

1. Open the Environment Variables dialog box. (Select **Control Panel > System > Advanced system settings > Environmental Variables** button (for Windows 7 or Vista users) or **Control Panel > System > Advanced tab > Environmental Variables** button (for Windows XP users). 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 the server 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 LSFORCEHOST environment variable values can contain up to 64 characters.
- **For LSHOST variables:** For multiple host names (for example, where there are

HP Functional Testing Concurrent License Servers running on one network), use a semicolon (;) to separate the host names or IP addresses in the **Variable 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.

Troubleshooting and Limitations - Working with the LSHOST and LSFORCEHOST Variables

When you install a new UFT installation and you specify a single concurrent license server in the License Wizard, UFT now automatically specifies the server in an LSFORCEHOST environment variable, to optimize performance. However, if you perform an upgrade from QuickTest or Service Test, and you already had an LSHOST variable defined, the upgrade installation does not change the setting to LSFORCEHOST.

Workaround: If desired, set the LSFORCEHOST variable manually, as described in "[Setting the LSHOST or LSFORCEHOST Variable](#)" on page 32.

Chapter 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 UFT clients. To run a UFT client, you must install a seat license on each computer, or set up the computers to access a different concurrent license server. For more details on changing a concurrent license to a seat license, see the *HP Unified Functional Testing Installation Guide*.

If you want to uninstall the license server and reinstall it on a different computer, contact HP Software Support to receive a new license key that matches the locking code for the computer on which you want to install the license server. For more details on requesting a concurrent license key, see ["Requesting a Concurrent License Key" on page 13](#).

To uninstall the concurrent license server:

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

Tip: To find the path of **lserverc** environment variable, right-click **My Computer** and select **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 **LSERVERC** variable. For example, `%CommonProgramFiles%\HP\License Manager\lserverc`.

- If the product is not installed, the file is located in the same folder as `lservernt.exe`. By default, this is `%CommonProgramFiles%\SafeNet Sentinel\ RMS License Manager Server\WinNT\`.

Tip: To find the location of `lservernt.exe`, select **Start > Settings > Control Panel > Administrative Tools > Services**. In the Services dialog box, right-click **Sentinel RMS License Manager** and select **Properties**. The path for `lservernt.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. Select **Sentinel RMS License Manager 8.x.x** or **Sentinel LM Server 8.x** and click **Remove**.

4. Follow the on screen instructions.

Note: You can also uninstall the concurrent license server by using the `autorun.exe` file located in the **LicenseServer** folder on the UFT installation DVD. Do not use the DVD to uninstall any other version of the license server, as this may cause unexpected behavior.

Accessing Concurrent License Server in Windows 8 Operating Systems

applications and files that were accessible from the **Start** menu in previous versions of Windows are accessible in Windows 8 from the **Start** screen or the **Apps** screen.

- **Applications (.exe files).** You can access applications in Windows 8 directly from the **Start** screen. For example
 - The Run Results Viewer
 - All tools, such as the Password Encoder and the License Validation Utility
 - The API testing sample Flight applications
- **Non-program files.** You can access documentation from the **Apps** screen.

Note: By default, the Start and Apps screens on Windows 8 are set to open Internet Explorer in Metro Mode. However, if User Account Control is turned off on your computer, Windows 8 will not open Internet Explorer in Metro mode. Therefore, if you try to open an HTML shortcut from the Start or Apps screen, such as the Help or Readme file, an error will be displayed.

To solve this, you can change the default behavior of Internet Explorer so that it never opens in Metro mode. In the **Internet Properties** dialog box > **Programs** tab, select **Always in Internet Explorer on the desktop** for the in the **Choose how you open links** option. For more details, see <http://support.microsoft.com/kb/2736601> and <http://blogs.msdn.com/b/ie/archive/2012/03/26/launch-options-for-internet-explorer-10-on-windows-8.aspx>.

We appreciate your feedback!

If you have comments about this document, you can [contact the documentation team](#) by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Installation Guide (Functional Testing Concurrent License Server 12.00)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to sw-doc@hp.com.

