



Mercury LoadRunner™

INSTALLATION GUIDE

Mercury LoadRunner™

Installation Guide
Version 8.0

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Before You Install

Welcome to Mercury LoadRunner, Mercury's automated load testing and tuning in production tool for Windows and UNIX systems. This guide describes everything you need to know to install LoadRunner. It describes the LoadRunner package contents, the required system configuration, registration and backup procedures, and how to run the setup programs.

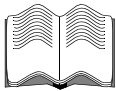
Before you begin to install LoadRunner, review the following pre-installation procedures.

Checking Your LoadRunner Package

Make sure that your LoadRunner package contains the items described below. If any items are missing or damaged, contact Mercury or your local distributor.

CD-ROMS

Your LoadRunner package includes two Windows CD-ROMs (Mercury LoadRunner 8.0 and Mercury LoadRunner 8.0 Add-ins) and a UNIX CD-ROM containing the LoadRunner program and associated files.



Documentation

LoadRunner is supplied with a set of documentation that describes how to:

- install LoadRunner
- create virtual user scripts
- use the LoadRunner Controller and Tuning Module Console
- configure the server monitors

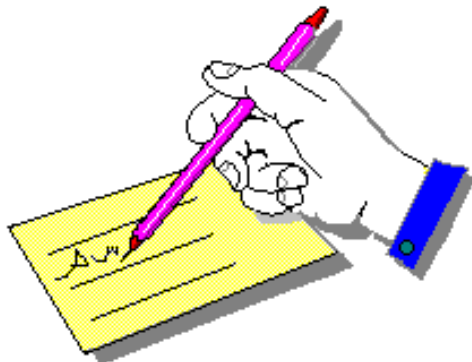
- analyze the results

Registering Your Copy of LoadRunner

Register your copy of LoadRunner to become a licensed user with all rights and privileges. Registered users have access to technical support and information on all Mercury products. You will also be eligible for updates and upgrades.

To register your copy of LoadRunner, fill out the Mercury Software Registration card.

- If you are in the USA, fill out the USA Owners portion of the card. Send the card to the Sunnyvale, California address printed on the card. No postage is necessary.
- If you are outside the United States, fill out the Non-USA portion of the registration card and send it to the appropriate international address. Affix postage to the card before mailing.
- Remember to notify Mercury or your local representative if you move to a new address, so that you can continue to receive product information and updates.



Note: You can also register your copy of LoadRunner on Mercury's Customer Support site: <http://support.mercuryinteractive.com>.

Where To Go From Here?

Your LoadRunner CD-ROM includes all the files that you need to install LoadRunner. Your actual setup procedure will differ depending on the environment that you will be testing using LoadRunner:

- ▶ If your environment consists of **only Windows-based** machines (i.e. the Controller/Console and all the Vusers will run on Windows-based machines), follow the setup procedure described in Part I of this guide.
- ▶ If your environment consists of **both Windows-based and UNIX-based** machines, follow the setup procedures described in Part I and Part II of this guide.

If your testing environment is...	See
Windows only	Part I
Windows and Unix	Part I and Part II

Terminology

Vuser	A virtual user—a LoadRunner-created user that emulates a human user.
Load Generator machine	The workstation used to host the LoadRunner Vusers.
Controller machine	The machine used to host the LoadRunner Controller.
Console machine	The machine used to host the Mercury Tuning Module Console.
Vuser Group	A collection of Vusers with common characteristics, such as the machine on which they run, or the client that they use.

Typographical Conventions

This book uses the following typographical conventions:

1, 2, 3	Bold numbers indicate steps in a procedure.
➤	Bullets indicate options and features.
>	The greater than sign separates menu levels (for example, File > Open).
Stone Sans	The Stone Sans font indicates names of interface elements on which you perform actions (for example, “Click the Run button.”). Stone Sans also indicates file names and file paths.
Bold	Bold text indicates method or function names
<i>Italics</i>	<i>Italic</i> text indicates method or function arguments, and book titles.
Arial	The Arial font is used for examples and text that is to be typed literally.
<>	Angle brackets enclose a part of a file path or URL address that may vary from user to user (for example, < Product installation folder >\bin).
[]	Square brackets enclose optional arguments.
{ }	Curly brackets indicate that one of the enclosed values must be assigned to the current argument.
...	In a line of syntax, an ellipsis indicates that more items of the same format may be included.

Part I

Windows Installation

1

Introducing the Windows Installation

Your LoadRunner CD-ROM includes a setup program that guides you through the process of installing LoadRunner's components.

The setup program installs LoadRunner on the hard disk of a single-user computer. For details, see Chapter 2, "Installing LoadRunner on Your Computer."

Your LoadRunner package includes two Windows CD-ROMs. The Mercury LoadRunner 8.0 CD contains the full LoadRunner installation and the virtual user components. The Mercury LoadRunner 8.0 Add-ins CD contains additional LoadRunner components.

You can choose to install the full LoadRunner configuration, the virtual user components, or server side components and add-ins. If you choose the full LoadRunner configuration, you can select a typical or a custom configuration. Choosing custom configuration lets you specify which LoadRunner components to install.

Windows System Requirements

In order to successfully run LoadRunner, you need the following minimum system configuration.

Requirement	Controller with Online Monitors	Console with Online Monitors	Virtual User Generator	Virtual Users	Analysis Module
Computer/Processor	Pentium 350 MHZ or higher	Pentium 350 MHZ or higher	Pentium 350 MHZ or higher	Pentium 1 GHz or higher	Pentium 350 MHZ or higher
Operating System	<ul style="list-style-type: none"> • Windows NT® service pack 6a and higher • Windows 2000 including service packs 2 and 3 • Windows XP Professional including service pack 1 • Windows 2003 	<ul style="list-style-type: none"> • Windows NT® service pack 6a and higher • Windows 2000 including service packs 2 and 3 • Windows XP Professional including service pack 1 • Windows 2003 	<ul style="list-style-type: none"> • Windows NT® service pack 6a and higher • Windows 2000 including service packs 2 and 3 • Windows XP Professional including service pack 1 • Windows 2003 	<ul style="list-style-type: none"> • Windows NT® service pack 6a and higher • Windows 2000 including service packs 2 and 3 • Windows XP Professional including service pack 1 • Windows 2003 	<ul style="list-style-type: none"> • Windows NT® service pack 6a and higher • Windows 2000 including service packs 2 and 3 • Windows XP Professional including service pack 1 • Windows 2003

Requirement	Controller with Online Monitors	Console with Online Monitors	Virtual Vuser Generator	Virtual Users	Analysis Module
Memory	128 MB or more	256 MB or more	128 MB or more	<ul style="list-style-type: none"> • At least 1 MB RAM for non-multi-threaded Vuser • At least 512 KB multi-threaded Vuser 	128 MB or more
Swap Space	Two times the total physical memory	Two times the total physical memory	Two times the total physical memory	Two times the total physical memory	Two times the total physical memory
Hard Disk Space	Installation: 300 MB	Installation: 350 MB	Installation: 300 MB	Installation: 130 MB	Installation: 100 MB
	Free: 200 MB	Free: 200 MB	Free: 200 MB	Free: Minimum 500 MB	Free: Minimum 500 MB
Browser	<ul style="list-style-type: none"> • IE 5.1 SP1 or higher • Netscape Navigator 4.x, 6.x 	<ul style="list-style-type: none"> • IE 5.1 SP1 or higher • Netscape Navigator 4.x, 6.x 	<ul style="list-style-type: none"> • IE 5.1 SP1 or higher • Netscape Navigator 4.x, 6.x 	N/A	<ul style="list-style-type: none"> • IE 5.1 SP1 or higher • Netscape Navigator 4.x, 6.x

Note: Refer to <http://www.mercuryinteractive.com/products/loadrunner/technical/> for the most updated installation requirements.

2

Installing LoadRunner on Your Computer

Your LoadRunner package includes two Windows CD-ROMs. The Mercury LoadRunner 8.0 CD contains the full LoadRunner installation and the virtual user components. The Mercury LoadRunner 8.0 Add-ins CD contains additional LoadRunner components.

This chapter describes:

- LoadRunner Installation Types
- Performing the Installation
- Completing the LoadRunner Installation Process
- Custom Installation Options
- Running the Uninstall Program

LoadRunner Installation Types

The table below shows the types of installation that are available:

CD	Type of Installation
Mercury LoadRunner 8.0	<ul style="list-style-type: none">• Full LoadRunner• Load Generator only• Monitors Over Firewall only• MI Listener only• ERP and CRM Mediator

CD	Type of Installation
Mercury LoadRunner 8.0 Add-ins	<ul style="list-style-type: none"> • WAN Emulation Driver • Remote Performance Monitor • J2EE Transaction Breakdown • SiteScope • Tuning Agent • Additional Components (Citrix Replay Agent, .NET Monitor Probe, COM+ Monitor Probe, IDE Add-ins, MSDE)

If you choose the full LoadRunner configuration, you can select a typical or a custom configuration. Choosing a custom configuration lets you specify which LoadRunner components to install.

The setup program installs LoadRunner on the hard disk of a single-user computer.

Performing the Installation

Note: You must log on as an NT Administrator when performing an installation on Windows NT 4.0 or higher.

Before installing LoadRunner 8.0, be sure to uninstall any previous versions of LoadRunner.

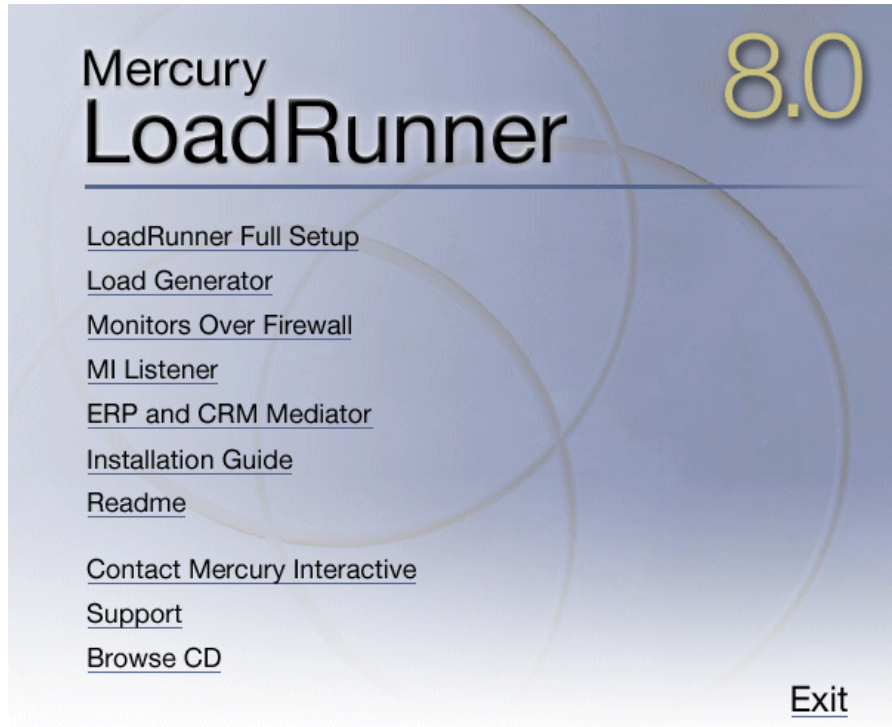
To install LoadRunner or an additional component on your computer:

- 1** Select the LoadRunner CD-ROM containing the component that you want to install, and insert it into a CD-ROM drive.
- 2** Click **Start**, and select **Run**.

- 3 Type the location that you are installing from, followed by **setup.exe**. For example, if your CD-ROM drive letter is M, type:

```
m:\win32\setup.exe
```

- 4 If you are running the Mercury LoadRunner 8.0 CD, the LoadRunner Setup program begins and displays the main installation screen.



Select the desired type of installation: LoadRunner Full Setup, Load Generator, Monitors Over Firewall, MI Listener, or ERP and CRM Mediator.

- **LoadRunner Full Setup** provides the option to install the LoadRunner Controller, Mercury Tuning Module Console, Virtual User (including GUI) components, online documentation, script samples, Load Generator, MI Listener, and ERP and CRM Mediator. Use this option for the machine that controls the Vusers.

Note: To install a standalone version of VuGen, select the **LoadRunner Full Setup** installation and use the Custom Installation option to select VuGen.

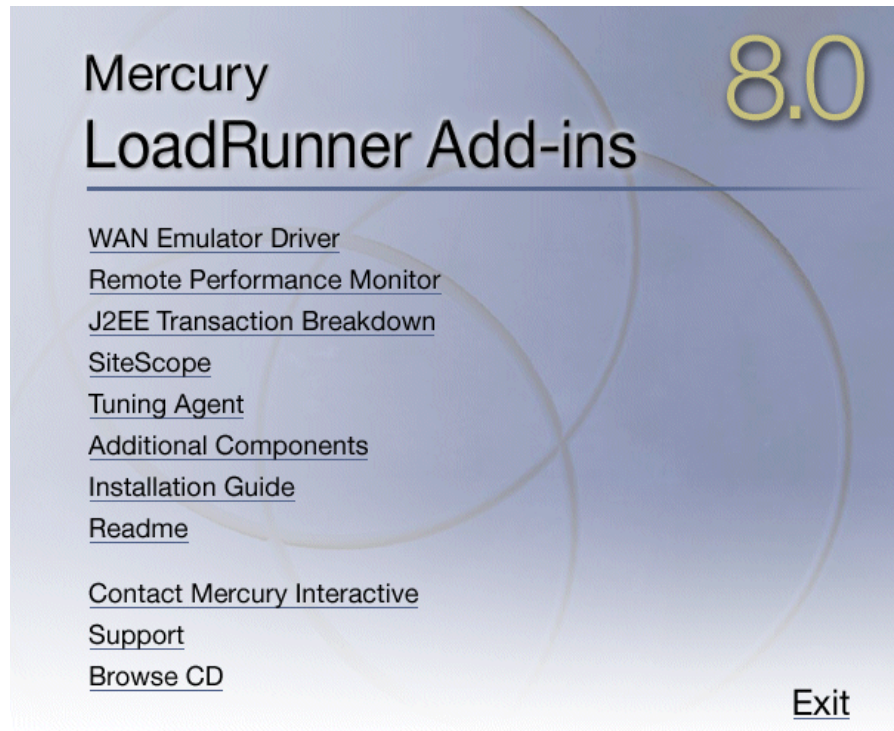
- ▶ **Load Generator** installs the components needed for running virtual users to generate load, and the MI Listener. Use this option for machines that are used only to generate load and not to control Vusers.
- ▶ **Monitors Over Firewall** installs the components on the agent machine for monitoring over the firewall. For more information, refer to the “Using Firewalls” chapter in the *LoadRunner Controller User’s Guide* or *Mercury Tuning Module Console User’s Guide*.
- ▶ **MI Listener** installs the components needed on the MI Listener machine used in running Vusers over a firewall and monitoring over a firewall. For more information, refer to the “Using Firewalls” chapter in the *LoadRunner Controller User’s Guide* or *Mercury Tuning Module Console User’s Guide*.
- ▶ **ERP and CRM Mediator** installs the component needed to gather and correlate offline transaction data for the ERP/CRM diagnostics modules.

Note: The mediator must be installed on a machine that resides in the same LAN as the monitored ERP/CRM server, preferably on a dedicated machine. We do not recommend installing the mediator on a Siebel or Oracle server that is involved in the load test.

By default, the mediator agent is installed to run as a process. We recommend configuring the mediator agent to run as a service. To configure the agent to run as a service, select **Allow virtual users to run on this machine without user login** in the User Login Settings window.

For more information, refer to the ERP/CRM Diagnostics section in the *LoadRunner Controller User’s Guide*.

- 5 If you are running the Mercury LoadRunner 8.0 Add-ins CD, the LoadRunner Setup program begins and displays the Add-ins installation screen.



Select the desired type of installation: WAN Emulator Driver, Remote Performance Monitor, J2EE Transaction Breakdown, SiteScope, Tuning Agent, or Additional Components.

- **WAN Emulator Driver** installs a driver that enables you to emulate the behavior of a wide variety of network infrastructures during a load testing scenario. Install this driver on a Load Generator machine.
- **Remote Performance Monitor** configures an IIS Web server for the Remote Performance monitor. This requires a machine with IIS installed. For more information about the Remote Performance monitor, refer to the *LoadRunner Controller User's Guide*.

- **J2EE Transaction Breakdown** provides the option to install the LoadRunner Probe and Mediator components. The Probe gathers information about the monitored transactions and passes data to the Mediator. The Mediator processes the transaction data, and passes it to the Controller or Console.

To install the Probe component, click **J2EE Transaction Breakdown**, and run the setup from the **Probe** directory. For more information, see Chapter 3, “Installing the J2EE Transaction Breakdown Probe.”

To install the Mediator component, click **J2EE Transaction Breakdown**, and run the setup file from the **Mediator** directory.

Note: The Mediator must be installed on a Windows 2000 machine that contains a load generator installation. We do not recommend installing the Mediator on the application server machine, since this can affect the load test results.

The Mediator and Probe should reside in the same LAN as the Controller. If you are monitoring over a firewall, the Controller can be outside the firewall provided you open port 54345 on the firewall in the Probe/Mediator LAN and in the Controller’s LAN to allow incoming and outgoing data.

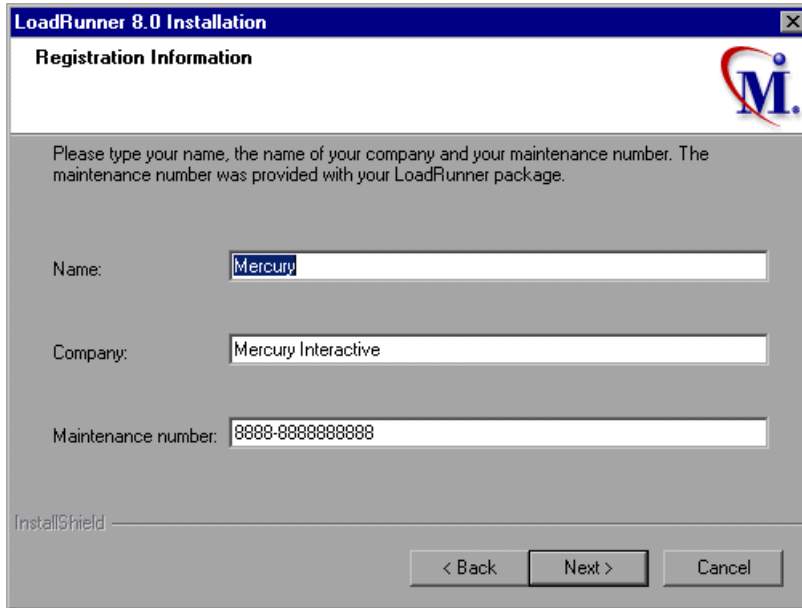
-
- **SiteScope** installs the SiteScope server used for the Siebel Web Server, SAP CCMS, SAP Portal, and Server Resource monitors.
 - **Tuning Agent** installs only the tuner agent on a computer. The tuning agent is an application that allows the Console machine to tune the computer remotely. For more information about tuning agents and remote tuning, see Chapter 11, “Tuning Agents”.

Note: To install a tuning agent, JRE version 1.3 or higher must be installed on the host machine.

- **Additional Components** enables you to install the following components:
 - **Citrix Replay Agent** installs an optional component on the server machine which enhances VuGen's capabilities in identifying Citrix client objects. To install the Citrix agent component, run the **CitrixAgent.exe** file.
 - **Microsoft .Net Server Monitor Probe** configures the server machine for .NET monitoring. To install the .Net Probe component, run the **Dot_Net_Probe.exe** file. For more information on configuring the server, refer to the Application Component section in the *LoadRunner Monitor Reference*.
 - **Microsoft COM+ Server Monitor Probe** configures the server machine for COM+ monitoring. To install the COM+ Probe component, run the **Com_Plus_Probe.exe** file. For more information on configuring the server, refer to the Application Component section in the *LoadRunner Monitor Reference*.
 - **IDE Add-ins** installs a component that enables you to create and run scripts, written in your standard development environment, in the application's native language. Select an add-in from the IDE Add-ins directory, and run the add-in's executable file.
 - **MSDE** installs the MSDE Database which is used for storing Analysis result data. To install MSDE, run the **Setup.exe** file.

If you selected the **WAN Emulation Driver** installation, the LoadRunner installation creates a new program folder on the Load Generator machine, and begins copying files. Note that the WAN Emulation driver installation may disconnect your open network connections.

- 6 Click an option. The InstallShield Wizard begins and displays the software licensing agreement. Read the agreement and click **Yes** to accept it and to display the Registration Information dialog box.

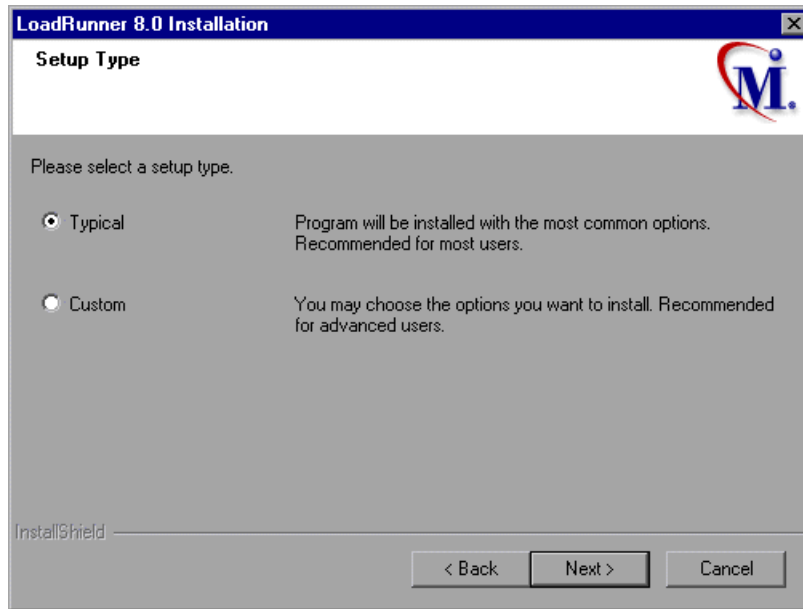


The screenshot shows a Windows dialog box titled "LoadRunner 8.0 Installation" with a sub-header "Registration Information". The dialog contains a logo for Mercury Interactive (a stylized 'M' with a red and blue arc) in the top right corner. Below the logo, there is a text prompt: "Please type your name, the name of your company and your maintenance number. The maintenance number was provided with your LoadRunner package." There are three text input fields: "Name:" with the value "Mercury", "Company:" with the value "Mercury Interactive", and "Maintenance number:" with the value "8888-8888888888". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel". The "InstallShield" logo is visible in the bottom left corner of the dialog area.

- 7 In the Registration Information dialog box, type your name, the name of your company, and your LoadRunner maintenance number. You can find the maintenance number in the maintenance pack shipped with LoadRunner.

Click **Next**.

- 8 If you are performing a full installation, the Setup Type dialog box displays the following options.



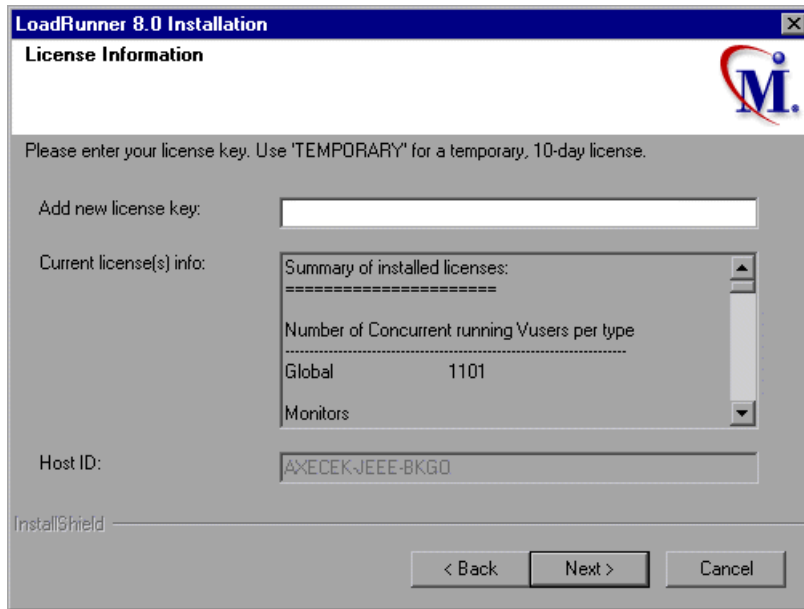
Select the type of installation that you want: Typical or Custom.

Typical Installation installs all commonly-used LoadRunner components, including the LoadRunner Controller, Mercury Tuning Module Console, Virtual User (including GUI) components, online documentation, and script samples. Use this option for the machine that controls the Vusers.

Custom Installation lets you install all the LoadRunner components, or select the components that you want to install. For details, see “Custom Installation Options,” on page 23.

Click **Next**.

- 9 If you are performing a full installation, the License dialog box displays the settings for the current LoadRunner license on your machine.

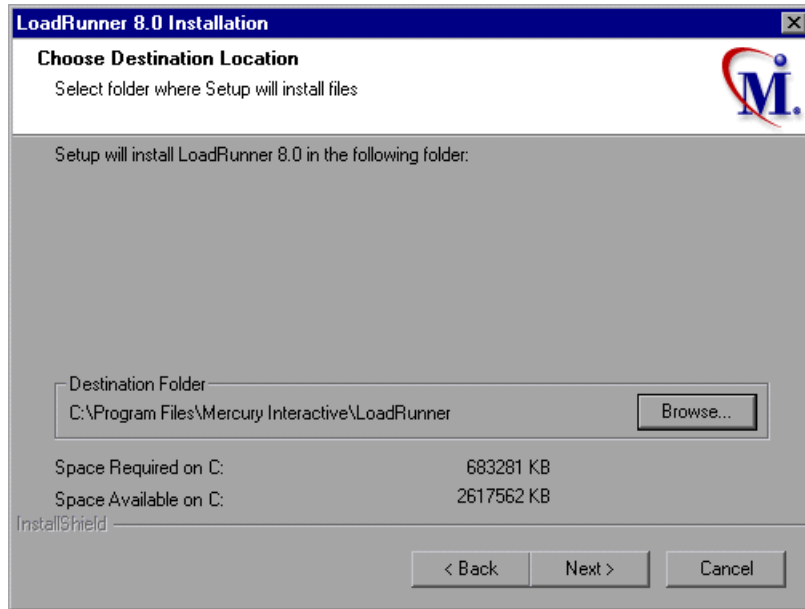


Enter the LoadRunner license key from your license agreement. If you are evaluating LoadRunner or waiting for a permanent license key, enter the license key 'TEMPORARY'. This will let you run up to 25 virtual users for a period of 10 days.

Click **Next**.

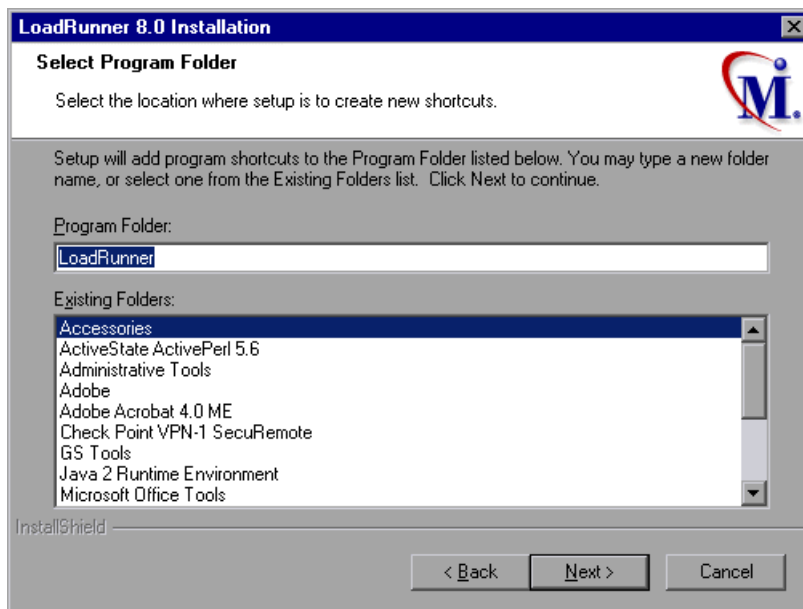
If you have a temporary license, LoadRunner issues a reminder indicating that you have 10 days to evaluate the product with 25 Vusers. Click **OK**. The LoadRunner installation updates the license information.

- 10 In the Choose Destination Location dialog box, specify the location where you want to install LoadRunner. To select a different location, click **Browse**, choose a folder, and click **OK**.



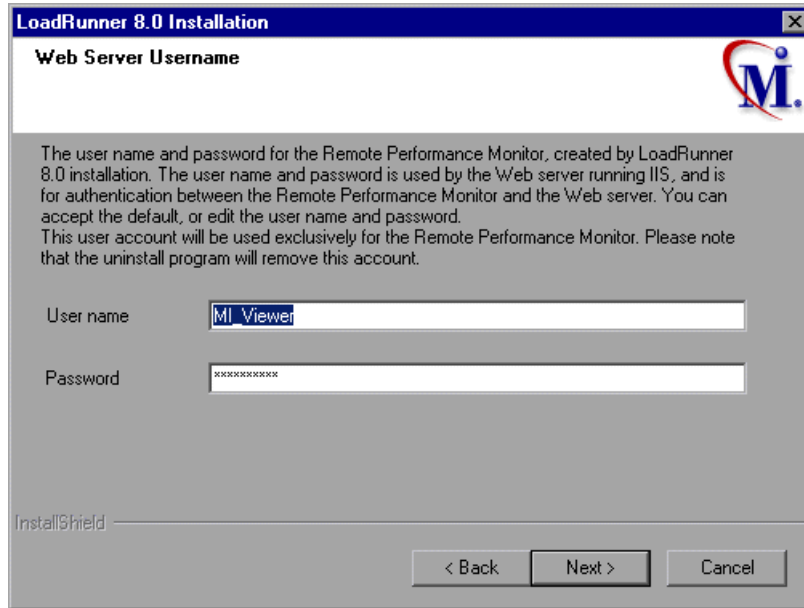
Click **Next**.

- 11 In the Select Program Folder dialog box, specify a program folder, or accept the default folder, LoadRunner.



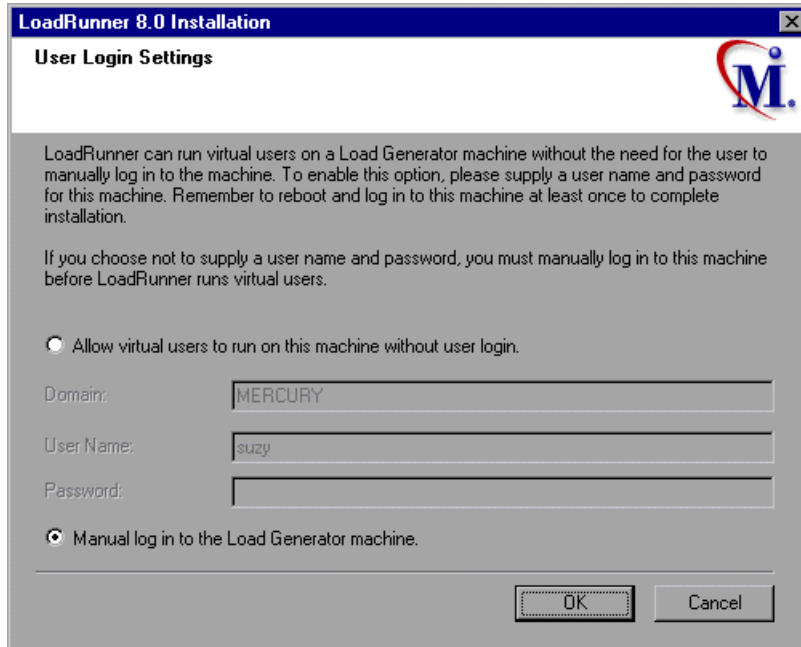
Click **Next**.

- 12** If you are installing the Remote Performance Monitor Server, the installation program displays the default user name and password used by the Web server running IIS. You can accept the defaults or enter your own values.



Note: After you complete the Remote Performance Monitor Server installation, you need to enter the same user name and password in the LoadRunner Controller RPM User Configuration dialog box. On the Controller machine, select **Start > Programs > Mercury LoadRunner > Tools > RPM User Configuration**. Enter the specified user name and password in the relevant fields, and click **Close**.

- 13 The installation settings that you selected are displayed in a read-only window. To select different installation settings, click **Back**. To begin installation, click **Next**. The installation process begins.
- 14 In the User Login Settings dialog box, select a user login setting.



Select one of the following user login settings:

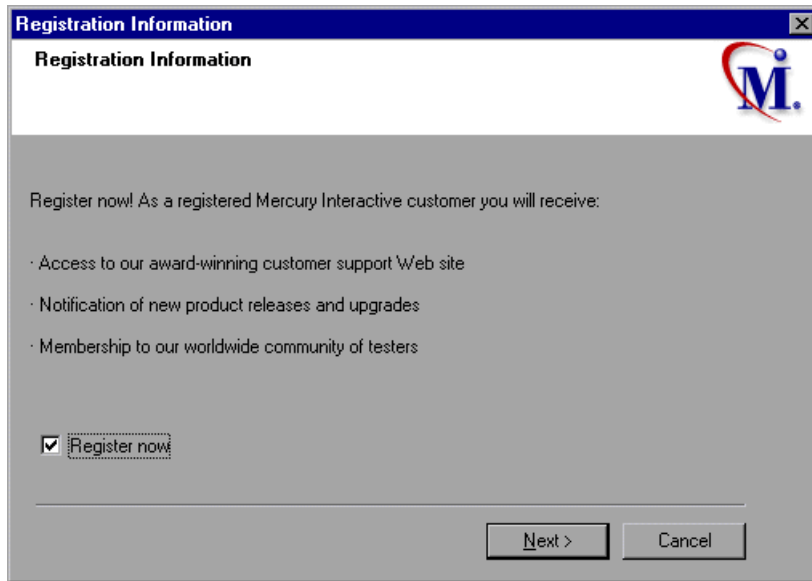
Allow virtual users to run on this machine without user login: LoadRunner will automatically log in to the network from the Load Generator machine, so the virtual users can run without any manual intervention. Enter the network domain where the user machine resides, a user name, and password. Note that the user specified in the automatic login must have administrator privileges on the Load Generator machine.

Note: You must boot and log in to the system at least once after the LoadRunner installation before the automatic login can work.

Manual log in to the Load Generator machine: The user must manually log into the network from the Load Generator machine for each session of running Vusers.

Click **OK**.

- 15** In the Registration Information dialog box click **Next** to complete the installation.



- 16** The setup program prompts you to restart your computer. You can delay restarting your computer until a later point.

Note: The following message appears the first time that a user logs on after a full LoadRunner installation: "HCL Inetd CPLInquire cpl 8af40c". This message relates to the HCL (Hummingbird Communications Ltd.) Inetd service, when Inetd is installed as a Windows NT service. Please close the message box and continue to start your computer.

The LoadRunner installation is now complete.

Completing the LoadRunner Installation Process

To complete the LoadRunner installation process:

- ▶ Select **Start > Programs > Mercury LoadRunner > Readme** to see what's new in LoadRunner, and any last-minute limitations.
- ▶ You use the Acrobat Reader to view the LoadRunner online documentation.

To install the latest Adobe Acrobat Reader, select

Start > Programs > Mercury LoadRunner > Documentation > Acrobat Reader Setup.

Note: Before you run the Acrobat Reader setup, uninstall any previous versions of Acrobat Reader. If you already have version 5.05 installed, it is not necessary to run the Acrobat Reader setup.

- ▶ To complete LoadRunner's sample installation, run the Samples setup after LoadRunner setup is complete. Refer to Chapter 6, "Installing LoadRunner Samples" for explanations of the sample tests and setup instructions.
- ▶ If your version of LoadRunner is supplied with a plug and you have not already installed the plug, do so now by inserting it in the parallel port.
- ▶ To create Vuser scripts for **Baan**, you need to specify the correct application server in the Baan user file.

The user file, u[username], is located under the Baan installation folder in **bse/lib/user**. Add the following line to the beginning of the user file:

```
std_program:ottstpteststand
```

This tells LoadRunner to use the Test Standard Program when recording and running Vusers.

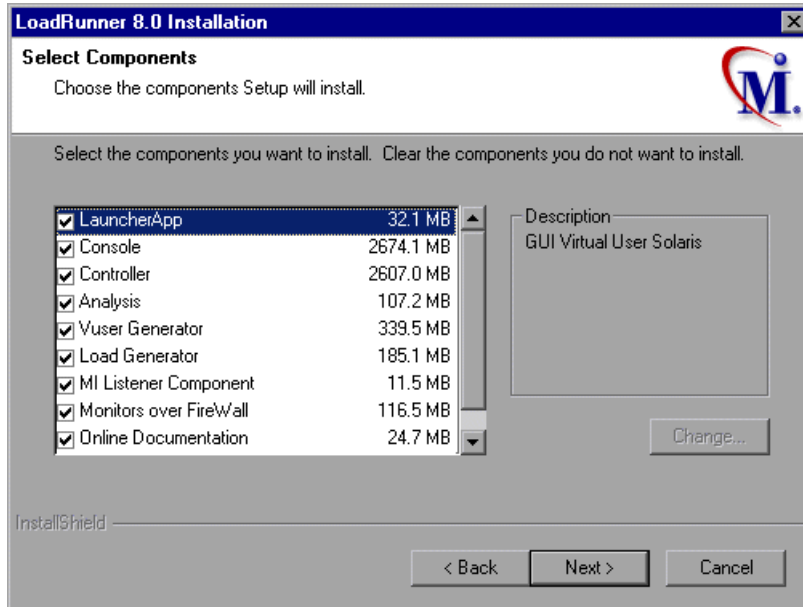
- ▶ To start LoadRunner, select **Start > Programs > Mercury LoadRunner > LoadRunner**. Select the application that you want to run from the Mercury LoadRunner window.

Custom Installation Options

If you choose to perform a Custom installation of LoadRunner, the setup program allows you to select the LoadRunner components that you want to install. You can install the following LoadRunner components:

- ▶ **LauncherApp:** The LoadRunner launcher window used to open the installed components.
- ▶ **Controller:** Controls the execution of scenarios and Vusers. Includes the online monitors which monitor and display information about the test execution. Install the Controller only on the machine that will control the Vusers.
- ▶ **Console:** Controls the tuning session. Includes the online monitors which monitor and display information about the session execution. Install the Console only on the machine that will control the Vusers.
- ▶ **Analysis:** Graphs and reports for analyzing the load test.
- ▶ **Vuser Generator:** LoadRunner's tool for creating virtual user (Vuser) scripts, through recording. Vuser scripts emulate users without a graphical user interface by using direct function calls. See the Readme file for supported protocols.
- ▶ **Load Generator:** The components for running virtual users (including Windows-based GUI Vusers) to generate load. Note that you must have WinRunner installed to run GUI Vusers.
- ▶ **MI Listener Component:** Components for the MI Listener machine used in running Vusers and monitoring over the firewall. For more information, refer to the Using Firewalls chapter of the *LoadRunner Controller User's Guide* or the *Mercury Tuning Module Console User's Guide*.
- ▶ **Monitors over FireWall:** Components on the agent machine for monitoring over the firewall. For more information, refer to the Using Firewalls chapter of the *LoadRunner Controller User's Guide* or the *Mercury Tuning Module Console User's Guide*.
- ▶ **Online Documentation:** All user guides in Acrobat format.

- **Samples:** The LoadRunner sample flight application.



Clear the check boxes next to the components that you do not want to install, and select the check boxes next to the components that you want to install.

If you want to choose which sub-components to install for the Controller, Console, or Load Generator components, click the **Change** button, select the check boxes next to the sub-components that you want to install, and then click **Continue**.

Click **Next** to proceed with the installation process.

Running the Uninstall Program

Your LoadRunner installation includes an uninstall program which uninstalls LoadRunner software and files from your computer and removes LoadRunner shortcuts from your Start menu.

To run the LoadRunner uninstall program:

- 1** Click **Start > Programs > Mercury LoadRunner > Uninstall Mercury LoadRunner**.
- 2** A message asks you to confirm your decision to uninstall LoadRunner. Click **Yes** to uninstall LoadRunner. Otherwise, click **No** to keep LoadRunner installed on your computer.
If you clicked **Yes**, the Uninstall Shield dialog box opens.
- 3** You may be prompted to terminate an active magentproc.exe process. Click **Yes** to terminate the process. Otherwise, click **No** to exit the uninstall program without removing LoadRunner from your computer.
- 4** You may be prompted to remove shared files that are not being used by any program. If you are not sure what to do, click **No to All**.
The Uninstall program removes LoadRunner from your computer.
- 5** When the Uninstall program is completed, you are prompted to restart your computer. Click **Yes** to immediately restart. Otherwise, click **No** to delay restarting your computer. If you click **No**, close all your applications and restart your computer as soon as possible.

Note: To uninstall LoadRunner immediately after you have installed the program, first restart your computer.

3

Installing the J2EE Transaction Breakdown Probe

The J2EE Transaction Breakdown Probe is used to gather information for the J2EE Transaction Breakdown Module monitor. The Probe resides on the application server where it gathers information about the monitored transactions. After you complete the J2EE probe installation, you must configure the application server to communicate with the probe.

This chapter describes:

- Installing the J2EE Probe on a Windows Machine
- Installing the J2EE Probe on a UNIX Machine
- Configuring the Application Server for the J2EE Probe
- Configuring the J2EE Probe to Work with Deep Diagnostics

Note: The J2EE Transaction Breakdown Diagnostics module monitor requires MSXML 3.0 or later (included in Internet Explorer 6.0). You can install MSXML 3.0 from the Microsoft MSDN Web site (<http://msdn.microsoft.com/library/default.asp?url=/downloads/list/xmlgeneral.asp>).

Installing the J2EE Probe on a Windows Machine

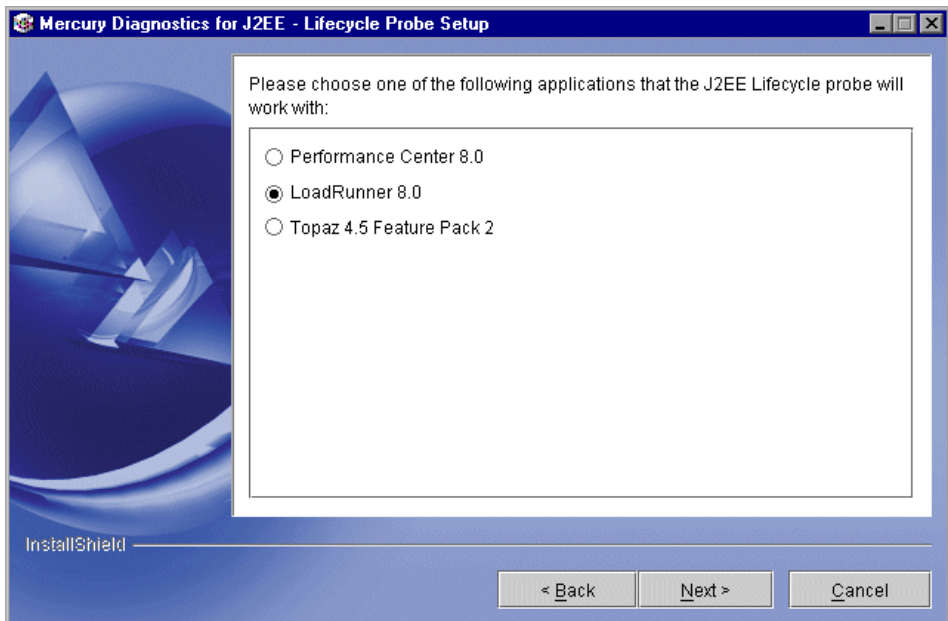
You install the J2EE Probe component from the Mercury LoadRunner 8.0 Add-ins CD. You can install the J2EE Probe to run on a Windows or UNIX platform.

To install the J2EE Probe on a Windows machine:

- 1** From the main installation screen of the Mercury LoadRunner 8.0 Add-ins CD, select **J2EE Transaction Breakdown**, and open the **Probe** directory.
- 2** Run the **J2EEProbeSetup_win.exe** file. The InstallShield Wizard begins and displays the software license agreement.

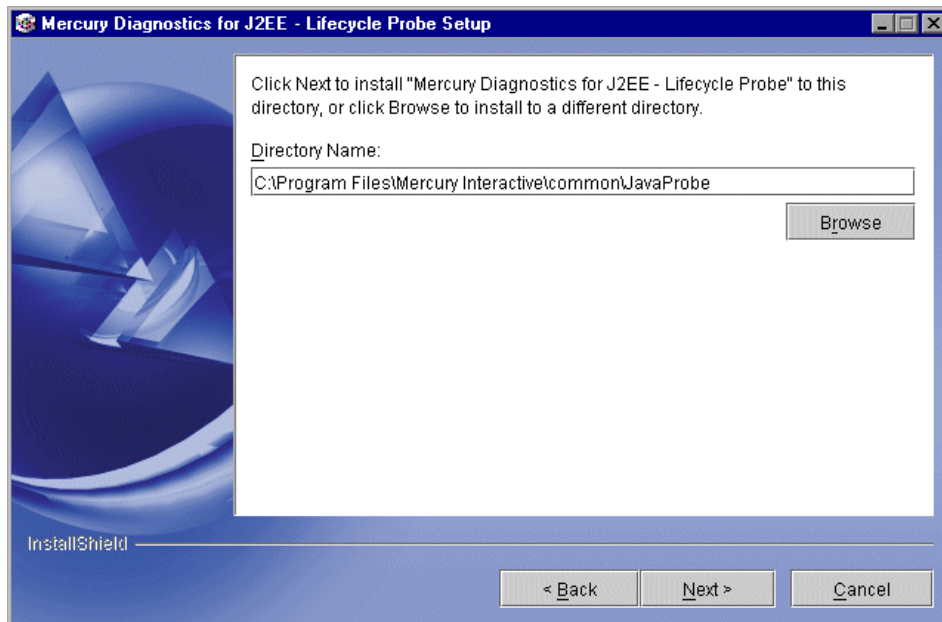
Read the agreement, click **I accept the terms of the license agreement** to accept it, and then click **Next**.

- 3** The Choose Application window opens, displaying the applications with which you can use the J2EE Lifecycle Probe.



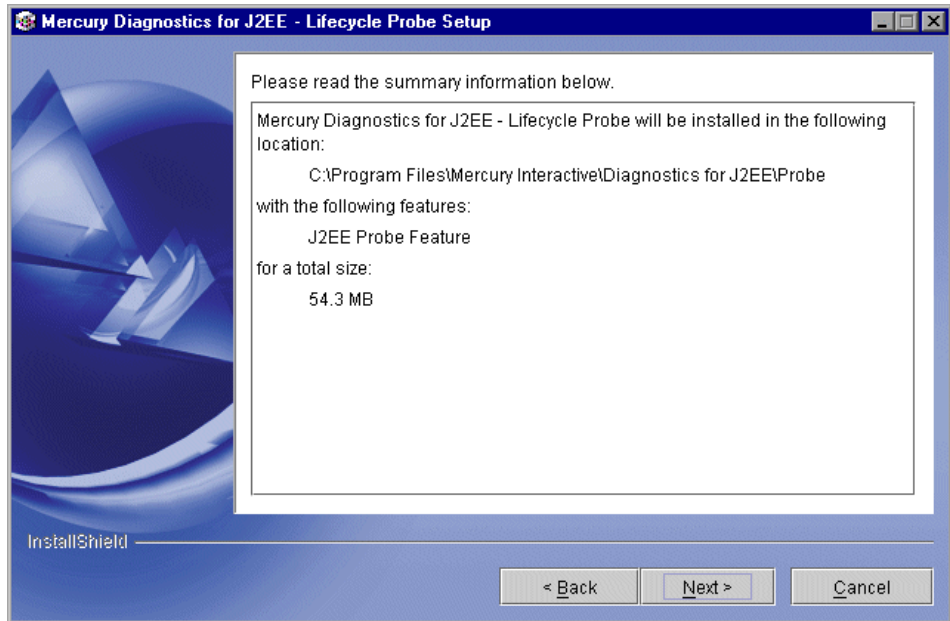
Choose **LoadRunner 8.0**, and then click **Next**.

- 4 The Destination Location window opens, allowing you to specify where you want the component to be installed.



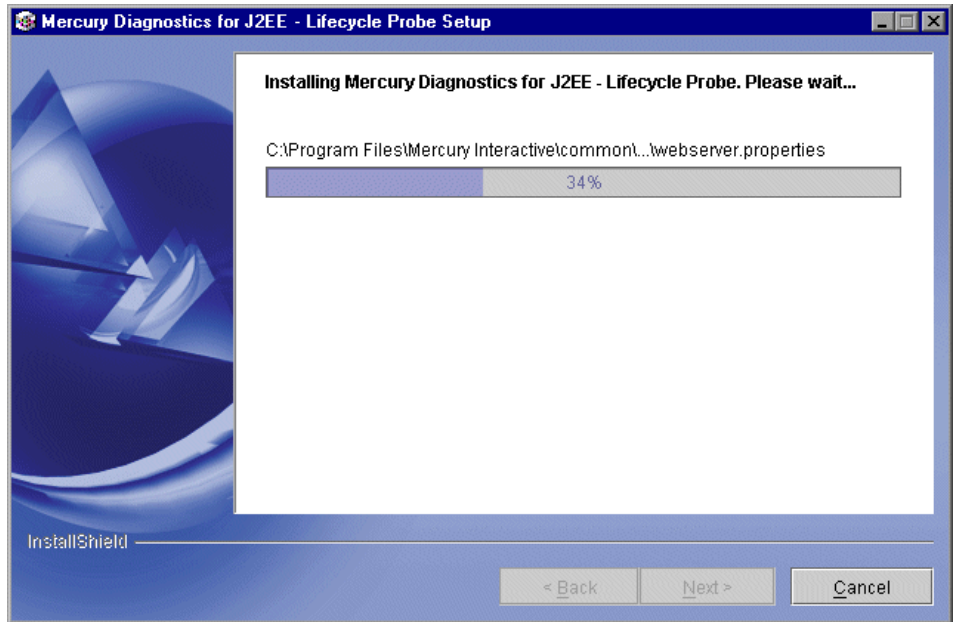
Accept the default directory or specify a different location, and then click **Next**.

5 The Summary Information window is displayed.

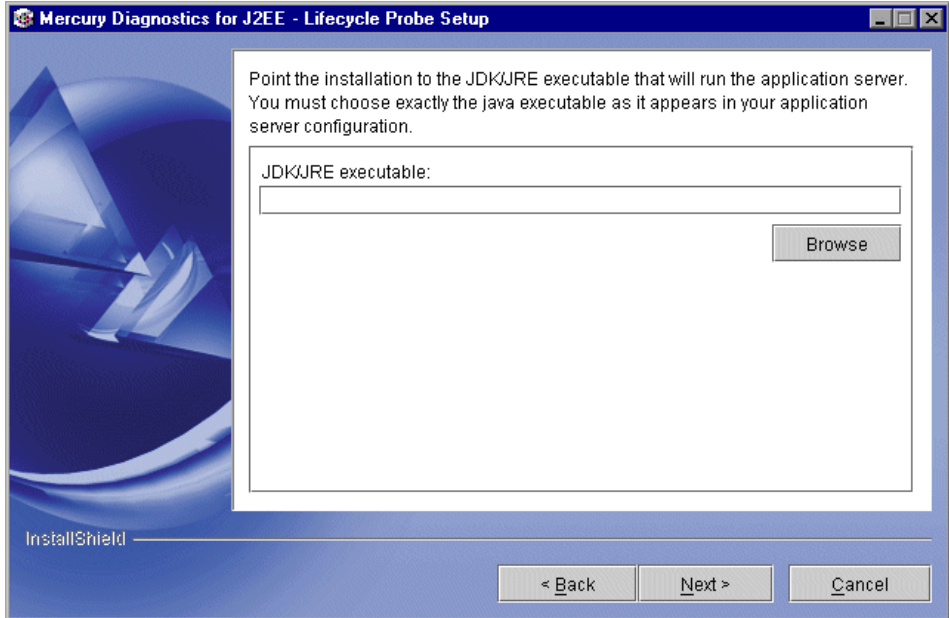


Click **Next**.

- 6 The installation process begins, and a progress bar is displayed.



- 7 After file installation is complete, the JDK/JRE window is displayed.



Enter the path to the java.exe executable used by the application server, and click **Next**.

- 8 Click **Finish** to exit the installation.

Note: After you complete the J2EE Transaction Breakdown installation, you configure the application server to communicate with the J2EE Transaction Breakdown probe. For more information, “Configuring the Application Server for the J2EE Probe” on page 34.

Installing the J2EE Probe on a UNIX Machine

To install the J2EE Probe on a UNIX machine:

- 1 On the Mercury LoadRunner 8.0 CD, locate the **J2EE_TxBD/Probe/** directory, and select a UNIX platform (for example, `J2EEProbeSetup_solv4.tar.gz`).

Use the following command line to extract the installation files:

```
gzip -d <name of file>
```

For example: `gzip -d J2EEProbeSetup_solv4.tar.gz`

- 2 To open the **.tar** file, run the command: `tar <xvf> <name of file>`

For example: `tar <xvf> J2EEProbeSetup_solv4.tar`

- 3 Run **install.sh** in console mode. Enter `install.sh -console` or `install.sh` and select 1.

The InstallShield Wizard begins and displays the software license agreement.

- 4 Read the agreement, and enter 1 to accept the terms of the license agreement, or 2 if you do not accept the terms. Enter 1 to continue.
- 5 Choose the application with which the J2EE Lifecycle probe will work. Enter 2 for LoadRunner 8.0. Enter 1 to continue.
- 6 Specify a directory where you want the component to be installed or press ENTER to accept the default directory. Enter 1 to continue.

The installation process begins, and a progress bar is displayed.

- 7 After the progress bar, the installation procedure asks for the path to the `java.exe` executable used by the application server. Enter the path and then enter 1 to continue.
- 8 After installation is complete, enter 3 to exit the procedure.

Configuring the Application Server for the J2EE Probe

To monitor J2EE objects, you configure the application server machine to communicate with the J2EE probe. This section explains these steps in general. For examples of how to perform these steps for different application servers, refer to the “J2EE Diagnostics Module” chapter in the *LoadRunner Controller User’s Guide*.

Note: Before making any changes, back up all startup scripts. This chapter uses <mercprobe> to denote the J2EE probe home directory.

To update the application server configuration:

- 1 Update the Java command line that starts the application server. Add the following parameter at the beginning of the line:

```
-Xbootclasspath/p:<mercprobe>/classes/boot
```

For example,

```
-Xbootclasspath/p:/bea/mercprobe/classes/boot
```

Note: If your JVM uses a JIT option, such as `-hotspot` or `-classic`, make sure that the `-Xbootclasspath` option is entered following the JIT option.

- 2 Restart the application server instance for which you configured the probe.

Note: Your site administrator may configure the application server using an alternative, site-specific method. If this is the case, the generic procedure may be sufficient for the administrator to understand what changes need to be done.

Configuring the J2EE Probe to Work with Deep Diagnostics

Once you have installed and configured the probe to work in LoadRunner, you can configure it to work with Deep Diagnostics. Assume that `<ProbeInstallDir>` is the directory where the probe is installed, and `<DD_DIR>` is the directory where the Deep Diagnostics is installed.

To configure the J2EE Probe to work with Deep Diagnostics:

- 1 In the Deep Diagnostics installation directory, edit the following files:

Pfmt.godel.expert.properties: change `pfmt.godel.probedir` to point to `<ProbeInstallDir>`

In the `.jax` files, replace all references to `../javaprobe` with `<ProbeInstallDir>`.

In the `SetEnv.sh/.cmd` and `CaptureEnv.sh/.cmd` files, replace all references to `../javaprobe` with `<ProbeInstallDir>`.

- 2 In the `<ProbeInstallDir>/etc` directory, edit the following files:

modules.properties: turn on the class map by commenting the existing `inst.object.names` line, and removing the comment from the next `inst.object.names` line.

capture.properties:

set `timeserver.host` to the machine running the Deep Diagnostics time server.

set `timer.synchronize.with.server.clock = true`

set `use.native.timestmaps = true` (this is optional)

- 3 Modify the application startup script to add the necessary boot classpath as follows:

Windows:

```
set OPTIBENCH_APPLICATION_NAME=foo
```

```
call %DD_DIR%\bin\CaptureEnv.cmd
```

(where `foo` is the name of the Application Definition you created in Deep Diagnostics)

UNIX:

```
export OPTIBENCH_APPLICATION_NAME=foo
```

```
source %DD_DIR/bin/CaptureEnv.cmd%
```

(where foo is the name of the Application Definition you created in Deep Diagnostics)

In the invocation of the application, insert \$OPTIBENCH_JAVA_ARGS.

4

Adding LoadRunner Components

After you install LoadRunner, you can run the setup program at any time to add LoadRunner components, such as samples, the Virtual User Generator, or the online documentation.

To add components:

- 1 Select the LoadRunner CD-ROM containing the component that you want to install, and insert it into a CD-ROM drive.
- 2 Click the **Start** button, and select **Run**.
- 3 Type the location that you are installing from, followed by **setup.exe**. For example, if your CD-ROM letter is M, type:

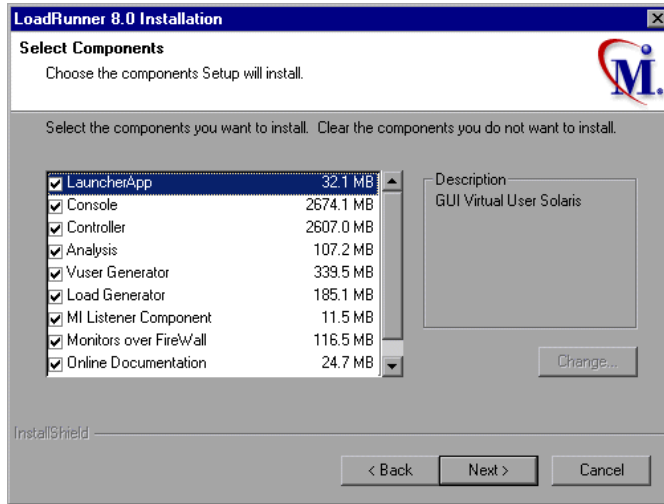
```
m:\win32\setup.exe
```

Click **OK**.

- 4 The InstallShield Wizard begins and displays the software licensing agreement. Read the agreement and click **Yes** to accept it. The LoadRunner setup program starts.
- 5 In the User Information dialog box, type your name, the name of your company, and a LoadRunner serial number. You can find this number on the outside of your LoadRunner box. Click **Next**.
- 6 Click **Custom Installation**, and then click **Next**.

Select the LoadRunner components that you want to add. Clear the check boxes next to the options that you do not want to add.

Note: The custom installation procedure will *not* remove previously-installed components that are not checked.



Click **Next**.

7 The installation settings you selected are displayed in a read-only window. Review the settings. If you want to select different installation settings, click **Back**. If you are satisfied with the installation settings, click **Next**. The installation process begins.

8 If you installed LoadRunner's samples, a message tells you to run the samples setup from the LoadRunner Samples program group to complete the samples installation. Refer to Chapter 6, "Installing LoadRunner Samples" for detailed explanations of the sample tests and setup instructions.

Click **OK** to continue with the setup procedure.

9 By default, the setup program creates the program group, LoadRunner, and creates the LoadRunner icons in the program group.

To add the LoadRunner icons to an existing program group, select the group from the list of Existing Groups. Click **Next**.

- 10** Depending on which components you added, the setup program either prompts you to restart your computer or informs you that the setup is complete. You can delay restarting the computer until a later time.
- 11** If you installed LoadRunner's online documentation, you use the Acrobat Reader to view the documentation files.

To install the latest Adobe Acrobat Reader, select

Start > Programs > Mercury LoadRunner > Documentation > Acrobat Reader Setup.

Note: Before you run the Acrobat Reader setup, uninstall any previous versions of Acrobat Reader. If you already have version 5.05 installed, it is not necessary to run the Acrobat Reader setup.

5

Viewing and Modifying a License

You can modify your license at any time directly from the Mercury LoadRunner window. This chapter describes:

- ▶ Viewing License Information
- ▶ Modifying a License
- ▶ Troubleshooting

Normally, you enter your license key during installation. The setup program prompts you for a license key. If you do not have your license key at the time of installation, you can use the temporary license by typing 'TEMPORARY' in the license key box. This grants you a 10 day license for 25 users. Afterwards contact Mercury Customer Support to obtain your permanent license key.

This chapter describes how to enter a license key *not* during installation, and how to upgrade an existing license.

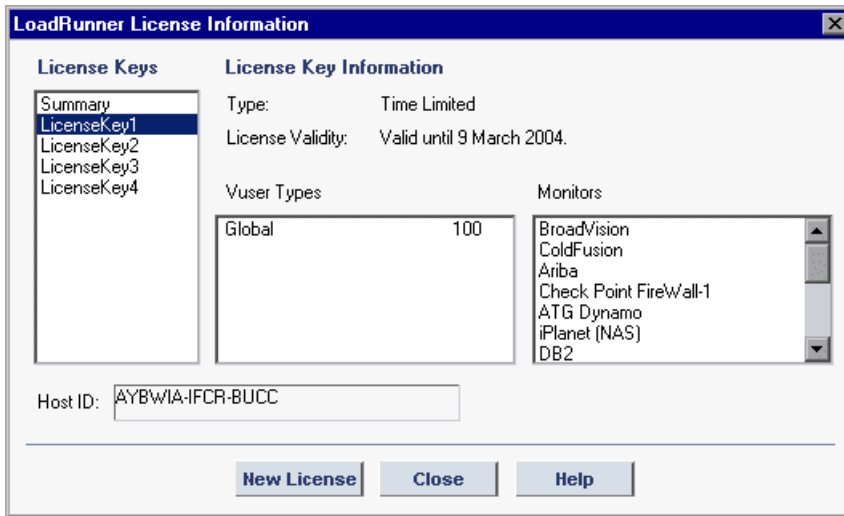
Viewing License Information

You can only view license information from the Mercury LoadRunner window.

To view the current license information:

- 1** Click **Start > Programs > Mercury LoadRunner > LoadRunner** to open Mercury LoadRunner, and then click **License**. The LoadRunner License Information dialog box opens, displaying the license information.

- 2 Scroll through the license information to determine the scope of your current license.



The License Keys list lists all the available license keys. In addition, you can select to view a summary of all the information in all the license keys.

The License Key Information box displays the license type, validity duration, Vuser types, and monitors for each selected license key.

The following types of licenses are available:

- **Permanent:** The license never expires.
- **Time Limited:** The license is limited by a start date and an expiration date.
- **Temporary:** The license is granted for a pre-defined number of days after product installation.
- **VUD-based:** The license is limited by a number of Virtual User Days (VUDs). A VUD-based license enables the user to use the product an unlimited number of times within a period of 24 hours.
- **Plugged:** The license requires a dongle.

The following groups of Vuser protocols are available:

- **Global:** The license lets you run all Vuser types, provided you stay within the global, or total limit. The number following Global indicates the total number of Vusers purchased.
- **Group ERP-1:** Includes SAP, Web, Oracle, MSSQL, and Siebel (GUI-Oracle) Vuser protocols.
- **Group ERP-2:** Includes SAP, Siebel (GUI-Oracle), Oracle, and Oracle-NCA Vuser protocols.
- **Group 3:** Includes all Vuser protocols, except for SAP, Siebel (GUI-Oracle), Oracle, and Oracle-NCA.

Monitors: Displays the server monitors available for the selected license key.

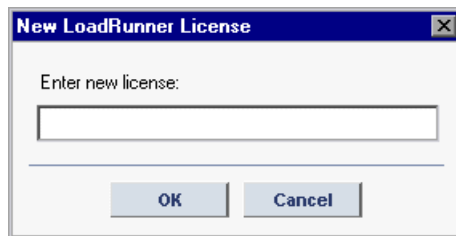
Host ID: Displays an ID for a specific machine. To receive a license key for a specific machine contact Mercury's Customer Support.

Modifying a License

You can only modify license information from the Mercury LoadRunner window.

To modify the current license information:

- 1** Click **Start > Programs > Mercury LoadRunner > LoadRunner** to open Mercury LoadRunner, and then click **License**. The LoadRunner License Information dialog box opens.
- 2** Click **New License**. The New LoadRunner License dialog box opens.



- 3 Enter the new license number exactly as it was given to you. Click **OK**. If your license is limited for a specific amount of time, LoadRunner issues a message accordingly.
- 4 Click **OK** to close the New LoadRunner License dialog.

Troubleshooting

If you have a temporary license key, contact Mercury Customer Support to obtain a permanent license key.

If LoadRunner does not accept your license key, perform the following checks:

- Make sure you typed in the license key exactly as it was given to you. Your license key is case sensitive.
- If your LoadRunner license requires that you use a plug when running LoadRunner, and a message is issued stating that a plug is not installed, perform the following:
 - Login as Administrator.
 - Run `<loadrun_directory>/bin/hinstall.exe/i`.
 - Reboot the machine.
- If you receive a “permission denied” error message during Controller start-up, you must grant “Full Control” permission for the Registry's HKEY_LOCAL_MACHINE key and in the WINNT directory (directory where Windows is installed).

To add Registry permissions:

- 1** Run **regedt32** to modify the registry.
- 2** Select the **HKEY_LOCAL_MACHINE** key.
- 3** Select **Security > Permissions**.
- 4** Add “Full Control” permission to the user that is running the Controller.
- 5** Turn on the **Replace Permission on the Existing Subkeys** flag.
- 6** Click **OK**.

To add permissions on an NTFS file system:

- 1** Select the **<System Drive>:\WinNT** folder.
- 2** Invoke **Properties**.
- 3** Select the **Security** tab.
- 4** Click **Permissions**.
- 5** Add “Full Control” permission for the user.
- 6** Turn on the **Replace Permissions on Subdirectories** flag.
- 7** Click **OK**.

6

Installing LoadRunner Samples

The LoadRunner installation includes sample Vuser scripts, a sample application, and sample database server and tables. In order to use the LoadRunner samples you must run the LoadRunner samples installation.

This chapter describes:

- Samples Setup Program
- Samples Setup Procedure
- Accessing the Readme File for Web, Corba or RMI

About LoadRunner Samples

The LoadRunner samples include:

- Sample Vuser scripts

The scripts demonstrate some of LoadRunner's features and allow you to run a true test.

- Sample flight application

The sample application is a flight reservation system which enables travel agents to order flight tickets. Travel agents work on the client application which connects to a central database server. This application is available for the following protocols: Web, Com, Corba, RMI, ODBC, MS ACCESS, Oracle, Sybase, and WinSocket.

- Sample database server and tables

You can install the Quadbase server, which is an ODBC database server provided with LoadRunner for demonstration purposes, or you can configure the flight reservation system to connect to an existing database server. The installation program installs all of the necessary tables for working with the sample application on the server of your choice.

Samples Setup Program

The LoadRunner samples setup program:

- Installs the sample Quadbase ODBC Server and Client (optional).
- Creates and populates data tables for use with the sample Flight application, on the Quadbase server or one of the other specified servers.
- Installs the sample Xitami Web server, ActivePerl, and LoadRunner Web Training site.
- Installs the sample Vuser scripts and updates the database connection strings for the sample Vuser scripts.
- Manages the **flights.ini** file to make it available for the Flight application.
- Registers the datasource for Flight-ODBC_Access and Flight-Winsock with the ODBC Administrator.
- Adds icons for the LoadRunner Samples program group.

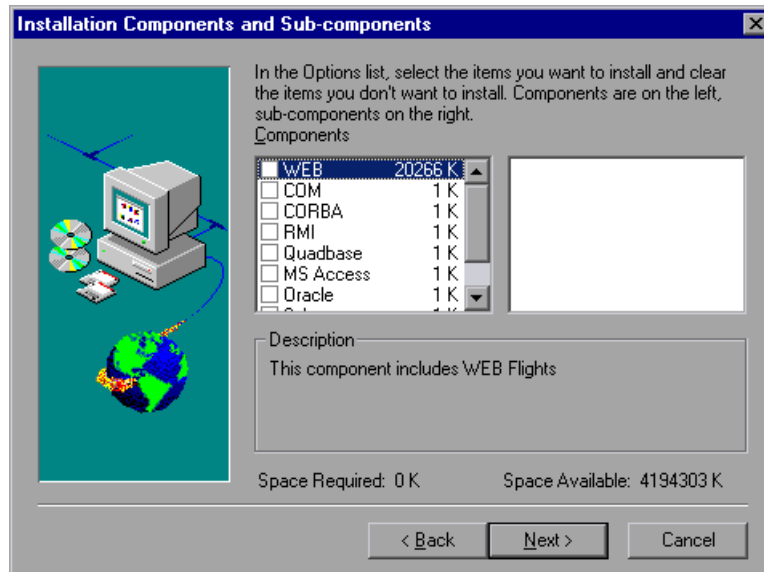
Samples Setup Procedure

To install the LoadRunner samples on your computer:

- 1** If you plan to use an existing database or WinSock application server, rather than installing the sample Quadbase ODBC server, make sure that your server is running and that you are familiar with the connection parameters.
- 2** Run the samples setup from the LoadRunner Samples program group.

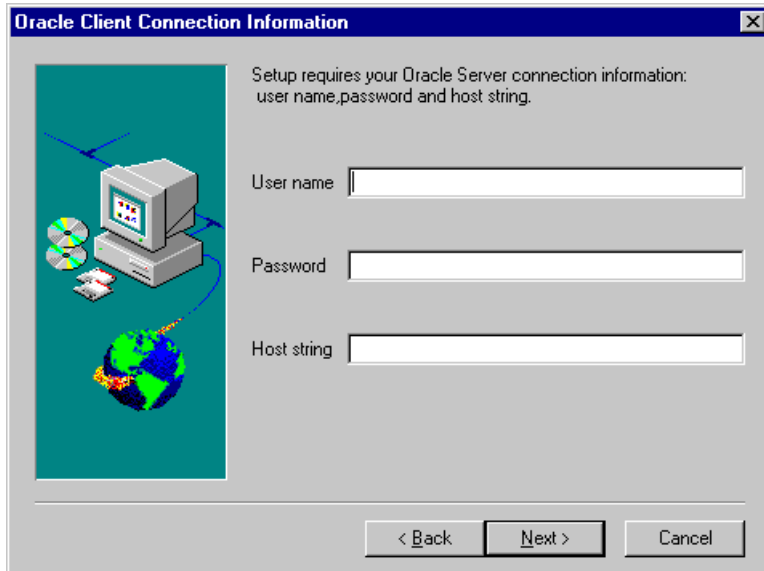
The LoadRunner Samples Setup program begins and displays the Welcome dialog box.

- 3 Click **Next** to proceed to the list of components and sub-components. Select one or more components.



Click **Next**.

- 4 If you are installing samples for an Oracle or Sybase server, you will be prompted to provide connection information, according to the selected server type. The **User name**, **Password**, and **Host string** fields will be filled in with the most recent information, if available on your system.



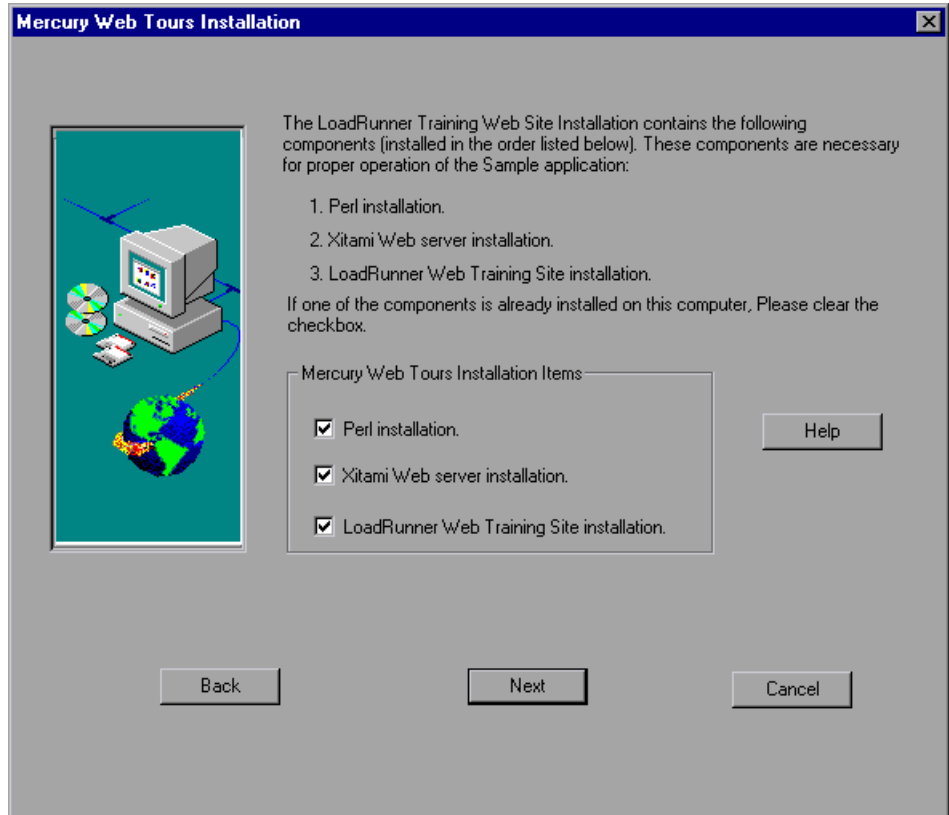
ODBC_access will display the default "flight32lr" and try to register it as a DSN with ODBC.

If you are installing the ODBC_Quadbase client, it will display the default "Quadbase". This is the same name used by the Quadbase server installation setup.

Enter the connection information and click **Next**. For Oracle servers, select the version of the Oracle client and click **Next**.

A message appears asking you if you would like to install or update the sample Flights database on your server. Click **Yes**.

- 5 If you are installing the Web samples, the Mercury Web Tours Installation dialog box opens prompting you to install the Mercury Web Tour Installation items. If a component is already installed on your computer, clear the component's checkbox.



Click **Next**. The InstallShield Wizard will prompt you through the setup steps for the selected components.

- 6 You will receive a prompt when setup is complete. Click **Finish** to close the setup program and view the new program icons.

Note: If you installed one of the Web server components, you must restart the computer before running the sample Web application.

It is recommended to copy **dat/flight32.mdb** to your local drive and register it manually. If you leave this file on the network, other users may accidentally access it.

Accessing the Readme File for Web, Corba or RMI

The sample Readme files provide detailed information about using the WEB, CORBA, and RMI sample applications:

- For **Web** samples, look in:

Start > Programs > Mercury LoadRunner > Samples > WEB > Mercury Demo Web Application Readme

or

<LoadRunner installation>\samples\Web\MercuryReadme.doc

Note: You must start the Xitami Web server before running the Mercury Web application demo.

- For **RMI** samples, look in:

Start > Programs > Mercury LoadRunner > Samples > RMI > RMI Flights Help

- For **Corba** samples, look in:

Start > Programs > Mercury LoadRunner > Samples > Corba > Corba Flights Help

Part II

UNIX Installation

7

Introducing the UNIX Installation

You can install LoadRunner to run virtual users on a UNIX platform. The UNIX virtual users interact with the LoadRunner Controller, installed on a Windows machine. Refer to Part I of this Installation Guide for information about installing the LoadRunner Controller. This chapter discusses the installation steps and system requirements for the LoadRunner UNIX Virtual User components.

UNIX Installation Steps

This guide describes the installation of LoadRunner Vusers on all of the supported UNIX platforms. When a section applies only to a specific platform, it is explicitly stated.

The main steps of the installation process are:

- Installing the program files
- Setting the environment

Once you complete the installation, refer to the additional documentation for details on working with LoadRunner.

Setting the Environment

Since LoadRunner virtual users emulate an actual user of your system, the environment on the virtual user machine must be configured for the user to run correctly. The environment variables are defined in the `.cshrc` file for cshell users, and the `.profile` file for Bourne and kshell users.

- The installation process determines the platform upon which the Vuser is running, and prepares a script to modify the `.cshrc` file for cshell users. Bourne and kshell users should manually modify the `.profile` file. Refer to Chapter 10, “Verifying Your Installation” for sample `.cshrc` and `.profile` files.
- The LoadRunner installation process helps you set the environment variable to indicate the location of the LoadRunner bin directory and any DLLs used by the underlying protocol. This environment variable is called `LIBPATH` on AIX, `SHLIB_PATH` on HP/UX, and `LD_LIBRARY_PATH` on Solaris and Linux.

System Requirements

Your actual memory requirements may vary, depending on your configuration. Note that the installation procedure uses additional memory which becomes free after the installation. To ensure a smooth installation of the UNIX components, it is recommended that you make sure there is sufficient storage space, process entries, and swap space in the disk partition where you intend to install LoadRunner.

The following table describes the system requirements for each platform supported by Mercury for LoadRunner UNIX Vusers.

Platform	Hardware	Version
Solaris	Ultra Sparc	Solaris 2.8 or higher
HP	HP 9000 series 700, 800,	HP-UX 11.x or higher
IBM	IBM RS/6000	AIX 4.3.3 or higher
Linux	PC i486	Red Hat 9.0 or higher

Note that LoadRunner supports all X Servers.

Note: For Linux platforms, you should install the updated glibc packages which provide security and bug fixes. For more information, refer to <https://rhn.redhat.com/errata/RHSA-2003-325.html#Red%20Hat%20Linux%208.0>

For the most updated LoadRunner installation requirements, refer to <http://www.mercuryinteractive.com/products/loadrunner/technical/>

System Resources

The following describes the system resources required for each platform or operating system. The actual resources may vary depending on the number of Vuser licenses purchased.

The resources for Vusers listed below apply to each virtual user. If you are installing multiple virtual users, you must multiply the figure by the number of virtual users.

Disk Space required for program installation	22 MB (34 for Linux)
Memory Space each Vuser if run as thread	300 KB (at least). This amount may vary, depending on the operating system and platform, and does not include the memory used by the process.
Memory Space each Vuser if run as process	1.5 MB (2.5 MB for Solaris)
Swap Space	approximately 1:7 memory/swap ration
Free Process Entries each Vuser if run as process	1
File Descriptors each Vuser if run as thread	2 (see below)

The **Memory Space** above describes a general C-Vuser type. Other types may take up more memory space. For example, each Web Vuser uses at least 500 KB.

A Load Generator additionally uses the following **File Descriptor** resources:

- ▶ 14 file descriptors for the LoadRunner launch service
- ▶ 20 file descriptors for the LoadRunner agent
- ▶ 30 file descriptors for each Vuser driver. By default, there is a driver for every 50 Vusers.

For example, to compute the number of file descriptors used in running 100 threaded Vusers the Load Generator requires:

14	for LR launcher
20	for LR agent
60	for 2 drivers (30 x 2, each one drives 50 Vusers)
200	for 100 Vusers (each Vuser requires 2)

Total: 294 File Descriptors

If Vusers are run as processes instead of threads, one driver is run per Vuser. Therefore, each Vuser requires 30 file descriptors.

You can increase the number of file descriptors, process entries, and amount of swap space by configuring the kernel, as described in this chapter.

Note: Most operating systems using LoadRunner 7.0 or higher have sufficient default file descriptors, process entries, and swap space, and rarely require reconfiguration.

Increasing Process Entries

Each Vuser requires several free process entries. To increase the number of process entries on your system, you must reconfigure the kernel.

Solaris 2.6

The following section describes how to reconfigure the kernel for Solaris operating systems:

- 1 Locate the `/etc/system` file.
- 2 Set the maximum number of processes in the system file. Type:

```
set max_nprocs=number (e.g.712)
```

- 3 Execute the `touch/reconfigure` command. Type:

```
touch /reconfigure
```

- 4 Reboot the machine.

HP-UX

The following section describes how to reconfigure the kernel for HP platforms:

- 1 Login as root.
- 2 Invoke the `sam` tool to reconfigure the kernel. Type:

```
sam &
```

- 3 Select **Kernel Configuration > Configurable Parameters**.
- 4 Set the following parameters to the desired values:

nproc: The number of simultaneous processes—(# of Vusers * 2) + 200

maxuser: The number of maximum users—DB + RTE Vusers + 20

maxuprc: The number of processes per user—# of Vusers * 2

- 5 Reboot the machine.

IBM

The following section describes how to reconfigure the kernel for IBM platforms using the AIX operating system:

- 1 Display the current settings. Type:

```
lsattr -EHL sys0
```

- 2 Increase the maximum number of process entries per user. Type:

```
chdev -l sys0 -a maxuproc = number (e.g.500)
```

- 3 Set the *nproc*, *maxusers* parameters to the desired values.

Linux

The following section describes how to reconfigure the kernel for Linux platforms:

- 1 Locate the `/etc/security/limits.conf` file.
- 2 Set the maximum number of processes in the limits file. Type:

```
hard nproc 8192
```

- 3 Reboot the machine.

Increasing File Descriptors

Each Vuser requires from 6 (non-GUI Vusers) to 27 (GUI Vusers) file descriptor entries. The procedure to increase the number of file descriptors differs between platforms and shells.

All Platforms

In these examples, the number of descriptors is increased to the maximum of 1024.

- 1 For sh and ksh users, type:

```
ulimit -n 1024
```

- 2 For csh users type:

```
limit descriptors 1024
```

Solaris

The following section describes some alternate procedures to increase file descriptors on Solaris operating systems. In these examples, the number of descriptors is increased to the maximum of 1024.

- 1 Use the *adb* command to increase file descriptors (all shells). Note that 400 HEX is the equivalent to decimal 1024. In the following example, **kernel** is the name of the kernel file, e.g., **kernel/unix**.

```
adb -w -k /kernel/dev/mem
rlimits+28?W 400
rlimits+28/W 400
```

- 2 You can also increase the maximum number of file processes by reconfiguring the kernel.

Login as root and set the *rlim_fd_max* parameter inside the */etc/system* file by typing:

```
set rlim_fd_max=1024
```

- 3 Save the file and reconfigure the system by typing:

```
touch /reconfigure
```

- 4 After reconfiguring the system, reboot the machine.

HP-UX

The following section describes how to increase file descriptors for HP platforms:

- 1 Login as root.
- 2 Invoke the *sam* tool to reconfigure the kernel. Type:

```
sam &
```

- 3 Select **Kernel Configuration > Configurable Parameters**.
- 4 Set the *maxfiles* parameters to the desired values. This is the equivalent to file descriptors on Sun platforms.

maxfiles: The number of files open at a given time, typically set to 60. Change it to 500 -1024.

- 5 Reboot the machine.

Linux

The following section describes some alternate procedures to increase file descriptors on Linux operating systems. In these examples, the number of descriptors is increased to the maximum of 8192.

- 1 Add the following line to the `/etc/security/limits.conf` file:

```
hard nfile 8192
```

- 2 Add the following line to the `/etc/sysctl.conf` file:

```
fs.file-max = 8192
```

- 3 Reboot the machine.

Increasing Swap Space

Each Vuser requires swap space ranging from 200 KB to 4 MB. Before adding space to your system configuration, you should determine your paging requirements. For environments running programs with very large memory requirements, it is recommended to have paging space of four times the physical memory. If you do not have enough paging space, certain processes may be killed, and others will be unable to start.

Solaris

The following section describes how to increase swap space for machines running Solaris:

- 1 List the available paging areas. Type:

```
swap -l
```

- 2 Display the available swap space. Type:

```
swap -s
```

- 3 Create a new paging file. Type:

```
mkfile size path (e.g. mkfile 50m /extra/page_1)
```

- 4 Add the page file to the existing configuration. Type:

```
/usr/etc/swapon -a /extra/page_1 0 102400
```


- 5 Enable all swap areas listed in the filesystem configuration. Type:

```
/usr/etc/swapon -a
```

IBM

The following section describes how to increase swap space for machines running the AIX Operating System:

- 1 List the available paging areas. Type:

```
lsps -a
```

- 2 Display the available swap space. Type:

```
swap -s
```

- 3 Create a new paging file, using a value one quarter the size of the actual file size. For example, to create 200 MB of paging space in the chemvg volume group, type:

```
mkps -a -n -s 50 chemvg
```

- 4 To increase the size of an existing paging file, type:

```
chps -s number paging_file
```

(e.g. `chps -s 10 page_01` adds 40 MB to `page_01`).

- 5 Add the page file to the existing configuration. Type:

```
swapon paging_area (e.g. swapon /dev/paging_01)
```

- 6 Enable all swap areas listed in the file system configuration file `/etc/swapspaces`. Type:

```
swapon -a
```

8

Installing LoadRunner on UNIX

LoadRunner is installed using the installation media provided with the LoadRunner distribution package. The installation uses a Java Runtime Environment (JRE).

The following sections describe installing the LoadRunner UNIX components from a UNIX CD-ROM device. If a UNIX machine with a CD-ROM device is not available, you can copy the UNIX components from the CD into a directory on your PC, and transfer them to a UNIX directory via ftp or an NFS mounting at a later stage.

Checking your Environment

- Verify that a CD-ROM device is attached to your local or remote machine.
- Find out which device driver is available for use with this drive. The device driver is usually located in the `/dev` directory of the machine to which the drive is attached. Consult your system administrator for the name of your device.

Installing LoadRunner on Multiple Platforms

In order to run LoadRunner on multiple UNIX platforms, you need to install a separate version of LoadRunner, in a separate directory, for each platform. The installation directories must be accessible to all the platforms. At the end of installation, follow the instructions at the end of this chapter for modifying the environment variables to indicate the LoadRunner installation directories.

For example, in order to install LoadRunner on a site that has both Solaris and IBM machines, you could use the following directories:

- ▶ For LoadRunner Solaris: `/tools/mercury/sol/lrunner`
- ▶ For LoadRunner IBM: `/tools/mercury/ibm/lrunner`

If you intend to run multi-platform scenarios, both directories should be NFS mounted. The Solaris machine should access the IBM installation directory and vice versa.

Running the Installation Program

Before you begin the installation program, make sure you can access the install script, `install.sh` from the CD. Note that most operating systems require you to mount the CD-ROM drive to a local directory. For information for mounting a CD-ROM on IBM, see “Preparing to Install from a CD-ROM (IBM only)” on page 71.

There are two installation modes: UI (or AWT) mode and console mode.

- ▶ To run the installation in UI mode, make sure that the `DISPLAY` environment variable is properly configured.
- ▶ To run the installation in console mode, add the `-console` parameter to the command line. For example:

```
install.sh -console
```

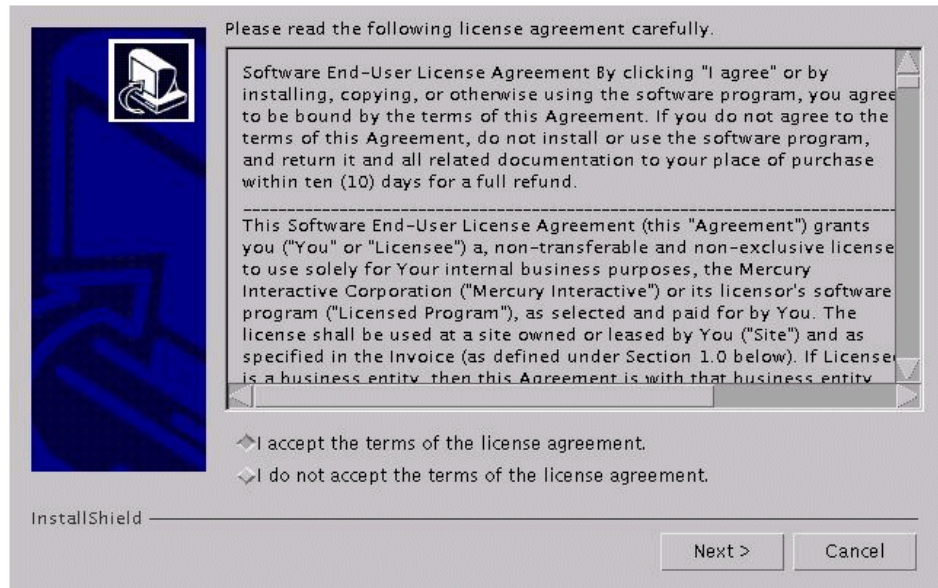
To run the LoadRunner installation program:

Note: The instructions below are for the UI mode.

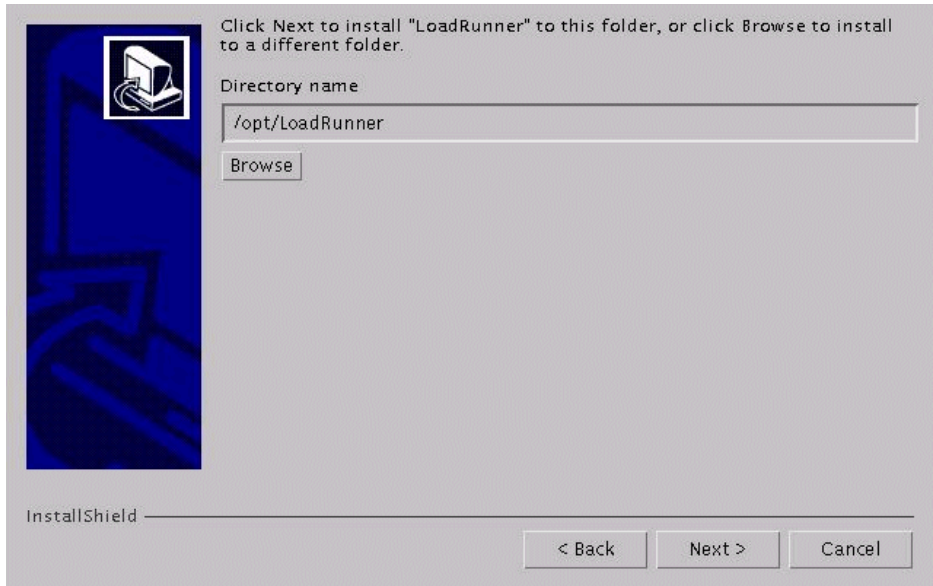
1 Type:

```
install.sh
```

The installation program begins and displays the license agreement.



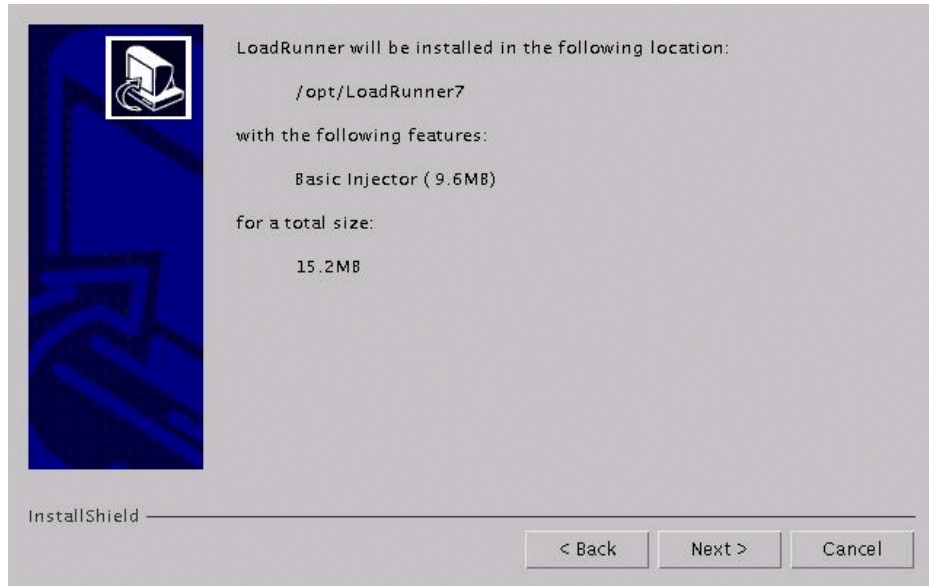
- 2 Read the agreement and select the option to accept it. The LoadRunner installation program begins and displays the installation location dialog box.



Choose the location where you want to install LoadRunner. To select a different location, click **Browse**, choose a directory, and click **OK**.

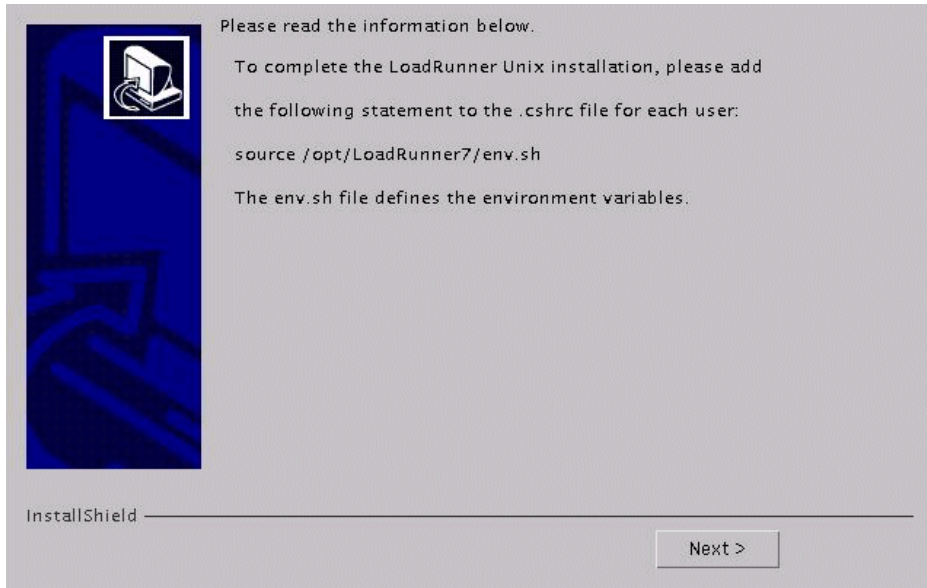
Click **Next**.

- 3 A read-only dialog box with your installation settings appears.



To select different installation settings, click **Back**. To begin installation, click **Next**. The installation process begins.

- 4 At the end of the installation, a message appears about setting the LoadRunner environment variables. The next step outlines this procedure. First complete the automatic installation by clicking **Next**.



- 5 The installation process prepared a file called **env.sh** that contains environment variable definitions for your cshell environment. Open the **.cshrc** file for each LoadRunner user and add the following statement:

```
source /opt/LoadRunner7/env.sh
```

where **/opt/LoadRunner7** is the LoadRunner installation directory.
Bourne shell and kshell users should refer to Chapter 9, “Post Installation” for instructions on modifying the **.profile** file.
- 6 Bring up a new terminal to run the **.cshrc** file. For more information about **.cshrc** files, see Chapter 9, “Post Installation.”
- 7 Be sure to run *verify_generator* to verify your Vuser installation. This is a confirmation step, to ensure that the specified directory and device name are correct, and that you have sufficient disk space. For information about the tests performed by *verify_generator*, see Chapter 10, “Verifying Your Installation.”

Preparing to Install from a CD-ROM (IBM only)

When installing LoadRunner on an IBM platform, you must mount the CD-ROM drive to access the installation program.

To mount the CD-ROM drive:

- 1** Insert the CD-ROM into the drive and log in or *su* as root.
- 2** Create the LoadRunner installation directory by typing:

```
mkdir -p /usr/cdrom/lrun
```

- 3** To add a CD-ROM file system, you need to use SMIT. To enter the program, type:

```
smit storage
```

- 4** From within SMIT, select **File Systems**.
- 5** Select **Add/Change/Show/Delete File Systems**.
- 6** Select **CD ROM File Systems**.
- 7** Select **Add a CDROM File System**.
- 8** Choose a DEVICE name. Note that device names for CD-ROM file systems must be unique.
- 9** Type in the following MOUNT POINT:

```
/usr/cdrom/lrun
```

- 10** Select the **Do** command, or click enter if you are using the ASCII interface.
- 11** Quit the SMIT program.
- 12** Type the following command in order to mount the CD-ROM file system:

```
smit mountfs
```

- 13** For the FILE SYSTEM Name, select either **/dev/cd0** or **/dev/cd1**.

- 14 Select the mount directory:

```
/usr/cdrom/lrun
```

- 15 Select **cdvfs** to set the TYPE of file system.
- 16 Select **Yes** to mount as a READ-ONLY system.
- 17 Select **Do** or **Enter** if you are using the ASCII interface.
- 18 Close your connection as the root user.

Running the Uninstall Program

The uninstall program, like the installation program, uses a Java Runtime Environment (JRE). You can also run the uninstall program in UI mode, or in console mode. To run the program in console mode, add the console parameter to the end of the command line.

To run the LoadRunner uninstall program:

- 1 To access the program, type:

```
cd <installation directory>/_uninst
```

- 2 Type:

```
uninstall [-console]
```

9

Post Installation

After installing LoadRunner, prior to starting work, you should check that your environment is configured properly.

This chapter describes:

- ▶ Setting Environment Variables
- ▶ Checking Authorizations
- ▶ Sample `.cshrc` and `.profile` Files

After you complete the post-installation configurations, run the LoadRunner verification utility to check your installation. For more information, see Chapter 10, “Verifying Your Installation.”

Setting Environment Variables

The LoadRunner installation procedure created a file, `env.sh` which sets the environment variables. Rather than manually updating your `.cshrc` file with the variable definitions, you include a statement to access `env.sh` at the end of the `.cshrc` file. This section describes the environment variables in your `env.sh` file. Note that if you are working with kshell or Bourne shell, you should manually set these variables in your `.profile` file. The syntax in the examples below are for cshell users. For kshell and Bourne shell users, see “LoadRunner Settings in the `.profile` File” on page 76.

- ▶ `M_LROOT`
- ▶ `PATH`
- ▶ `LD_LIBRARY_PATH` (Solaris, Linux), `LIBPATH` (AIX), `SHLIB_PATH` (HP-UX)

M_LROOT: Set M_LROOT to the LoadRunner installation directory. For example:

```
setenv M_LROOT /tools/lrunner
```

PATH: The location of LoadRunner's executable programs, the *bin* directory, must be added to the PATH variable.

```
set path = ($path $M_LROOT/bin)
```

LD_LIBRARY_PATH: The path should include the location of LoadRunner's dynamic libraries (\$M_LROOT/bin). To set the path, type:

```
setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:$M_LROOT/bin
/*Solaris and Linux*/
setenv SHLIB_PATH ${SHLIB_PATH}:$M_LROOT/bin/*HP Platforms */
setenv LIBPATH "${LIBPATH}:$M_LROOT/bin" /*IBM Platforms */
```

Check the dynamic libraries used by your application, and make sure that their path is also included in the appropriate dynamic library path environment variable (LD_LIBRARY_PATH, SHLIB_PATH or LIBPATH).

To check the dynamic libraries used by your application, type:

```
ldd my_application /* Sun and Linux platforms */
chrtr my_application /* HP platforms */
dump -H my_application /* IBM platforms */
```

Note: Remember that in order to use Oracle73, you need to add the path Oracle73 libraries to the dynamic libraries path environment variable.

Checking Authorizations

In order to execute Vusers on remote hosts, you must be authorized to execute a **remote shell**. To check your permissions on a host, type:

- For Solaris, Linux and IBM platforms:

```
rsh hostname ls
```

- For HP platform:

```
remsh hostname ls
```

If you do not have permission, consult the *.rhosts* file (man *rsh* or *remsh*).

Sample .cshrc and .profile Files

LoadRunner Settings in the .cshrc File

The following is an example of LoadRunner settings within a user's *.cshrc* file:

```
# LoadRunner settings #
#Chooses a path based on the location of the machine dependent LoadRunner
installation

switch ("uname")
  case SunOS:
    setenv M_LROOT {replace with LoadRunner Solaris installation path}
    setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:${M_LROOT}/bin
    breaksw

  case HP-UX:
    setenv M_LROOT {replace with LoadRunner HP-UX installation path}
    setenv SHLIB_PATH ${M_LROOT}/bin ${SHLIB_PATH}
    breaksw
```

```
case Linux:
    setenv M_LROOT {replace with LoadRunner SunOs installation path}
    setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:${M_LROOT}/bin
breaksw

case AIX:
    setenv M_LROOT {replace with LoadRunner AIX installation path}
    setenv LIBPATH ${M_LROOT}/bin:${LIBPATH}
breaksw
endsw

set path = ($M_LROOT/bin $path)

# End LoadRunner setting #
```

LoadRunner Settings in the .profile File

The following is an example of LoadRunner settings within a user's **.profile** file for kshell and Bourne shell environments:

```
# LoadRunner settings #
#Chooses a path based on the location of the machine dependent LoadRunner
installation

case "$(uname)" in
    SunOS)
        M_LROOT={replace w/ LR Solaris installation path} ; export M_LROOT
        LD_LIBRARY_PATH=${M_LROOT}/bin ; export LD_LIBRARY_PATH
        ;;

    HP-UX)
        M_LROOT={replace w/ LR HP-UX installation path} ; export M_LROOT
        SHLIB_PATH=${M_LROOT}/bin ; export SHLIB_PATH
        ;;
```

AIX)

```
M_LROOT={replace w/ LR AIX installation path} ; export M_LROOT  
LIBPATH=${M_LROOT}/bin ; export LIBPATH
```

```
::
```

Linux)

```
M_LROOT={replace w/ LR Linux installation path} ; export M_LROOT  
LD_LIBRARY_PATH=${M_LROOT}/bin; export LD_LIBRARY_PATH
```

```
esac
```

```
PATH=${M_LROOT}/bin:${PATH}; export PATH
```

```
# End LoadRunner setting #
```


10

Verifying Your Installation

LoadRunner has a setup verification utility *verify_generator*, that checks the LoadRunner setup. It checks environment variables and your *.cshrc* file to verify that they are set up correctly. The *verify_generator* utility checks the remote Vuser hosts.

It is strongly recommended that you run *verify_generator* after a Vuser installation, before attempting to invoke LoadRunner.

The *verify_generator* Test

The utility checks the following items in the Vuser environment:

- at least 128 file descriptors
- proper *.rhost* permissions: *-rw-r--r--*
- the host can be contacted using *rsh* to the host. If not, checks for the host name in *.rhosts*
- *M_LROOT* is defined
- *.cshrc* defines the correct *M_LROOT*
- *.cshrc* exists in the home directory
- the current user is the owner of the *.cshrc*
- a LoadRunner installation exists in *\$M_LROOT*
- the executables have executable permissions
- *PATH* contains *\$M_LROOT/bin*, and */usr/bin*
- the *rstatd* daemon exists and is running

verify_generator Option

The `verify` utility checks the local host for its communication parameters and its compatibility with all types of Vusers. If you intend to run all of the Vusers on one host, type:

```
verify_generator
```

`verify_generator` either returns 'OK' when the setting is correct, or 'Failed' and a suggestion on how to correct the setup.

The syntax of `verify_generator` is as follows:

```
verify_generator [-v]
```

`-v` provides detailed information about the checks.

Part III

Installing and Uninstalling Tuning Agents

11

Tuning Agents

This chapter explains how to install and uninstall a tuning agent on a host machine when using Mercury Tuning Module. You can install a tuning agent via the installation procedure or by copying files from the Mercury LoadRunner 8.0 Add-ins CD to the host machine.

This chapter includes the following sections:

- Installing a Tuning Agent via the Installation Procedure
- Installing a Tuning Agent by Copying Files
- Tuning Agent Privilege Requirements
- Uninstalling a Tuning Agent

Note: To install a tuning agent, JRE version 1.3 or higher must be installed on the host machine.

Installing a Tuning Agent via the Installation Procedure

- 1** Insert the Mercury LoadRunner 8.0 Add-ins CD in a drive on the host machine and run the installation procedure.
- 2** Choose the **Tuning Agent** action in the installation procedure.

Installing a Tuning Agent by Copying Files

To install a tuning agent locally on a Windows host by copying a file from the Console machine:

- 1** Extract the `perfagent.tar` file (located in the `\Mercury LoadRunner\console\bin` directory on the Console machine) to a directory on the host machine (for example, to `C:\Program Files\Mercury Interactive\Tuning Agent`).
- 2** On the host machine, set the `PE_HOME` environment variable (in this example, `PE_HOME = C:\Program Files\Mercury Interactive\Tuning Agent`).
- 3** On the host machine, launch the tuning agent application. In this example, you would run the following file:

```
C:\Program Files\Mercury Interactive\Tuning Agent\agent\bin\pe_agent.exe
```

To install a tuning agent locally on a UNIX host:

- 1** Copy the `perfagent.tar` file (from the `\Mercury LoadRunner\console\bin` directory on the Windows machine where the Console is installed) to a directory on the UNIX machine (for example, to `/usr/local/tuningagent`), and extract it to that directory.
- 2** On the host machine, set the `PE_HOME` environment variable (in this example for `csh`, `setenv PE_HOME /usr/local/tuningagent`)
- 3** On the host machine, launch the tuning agent batch file. In this example, you would run the following file:

```
/usr/local/tuningagent/agent/bin/pe_agent
```

You can skip step 2 by passing the path to the installation directory to `pe_agent` in the command line, as in the following example:

```
% pe_agent 0 true /usr/local/tuningagent
```

Tuning Agent Privilege Requirements

The tuning agent requires specific privileges in order to provide configuration and server log information to the client. The user hosting or running the tuning agent must have all necessary privileges in order to function properly. While the tuning agent may have access to all necessary environments, the client-user's access to a subset of tuning operations and environments can be controlled through the **security.properties** file.

The list of requirements for each operating system and server environment are outlined below on a per operation basis. If the tuning agent does not have all necessary privileges for a particular operation in an environment, it will fail to execute the operation properly - an error message may or may not be issued (depending on the severity of the operation).

Operating System: Windows NT/2000

Operation	Requirements
Get OS Information	Registry Keys & Win32 API calls
Get Configuration	Registry Keys (HKEY_LOCAL_MACHINE)
Update Configuration	Registry Keys (HKEY_LOCAL_MACHINE)
Start/Stop Operating System	Win32 API InitiateSystemShutdown(...)
Start/Stop Windows Services	net start/stop
Get Logs	Event Viewer, and netstat.exe
Clear Logs	Event Viewer

Operating System: HP-UX 9/10

Operation	Requirements
Get OS Information	Execute-access uname, model, etc/dmesg
Get Configuration	<ul style="list-style-type: none"> • Execute-access /usr/sbin/kmtune • Read-access to all the directories that kmtune accesses • Execute-access to ndd • Read-access to all the directories that ndd accesses
Update Configuration	<ul style="list-style-type: none"> • Execute-access /usr/sbin/kmtune • Write -access to all the directories that kmtune accesses • Execute-access to ndd • Write-access to all the directories that ndd accesses
Start/Stop Service	Execute-access to sync & reboot
Get Logs	<ul style="list-style-type: none"> • Read-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat • Write-access to /tmp
Clear Logs	<ul style="list-style-type: none"> • Delete-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat

Operating System: IBM AIX 4.x/5.x

Operation	Requirements
Get OS Information	Execute-access uname , prtconf , bootinfo , vmstat
Get Configuration	<ul style="list-style-type: none"> • Execute-access vmtune • Read-access to all the directories that vmtune accesses • Execute-access no • Read-access to all the directories that no accesses
Update Configuration	<ul style="list-style-type: none"> • Execute-access vmtune • Write-access to all the directories that vmtune accesses • Execute-access no • Write-access to all the directories that no accesses
Start/Stop Service	Execute-access sync & reboot
Get Logs	<ul style="list-style-type: none"> • Read-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat • Write-access to /tmp
Clear Logs	<ul style="list-style-type: none"> • Delete-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat

Operating System: Linux

Operation	Requirements
Get OS Information	Execute-access uname Read-access /proc/cpuinfo
Get Configuration	<ul style="list-style-type: none"> • Execute-access sysctl • Read-access to all the directories that sysctl accesses
Update Configuration	<ul style="list-style-type: none"> • Execute-access sysctl • Write-access to all the directories that sysctl accesses
Start/Stop Service	Execute sync & reboot
Get Logs	<ul style="list-style-type: none"> • Read-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat • Write-access to /tmp
Clear Logs	<ul style="list-style-type: none"> • Delete-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat

Operating System: Solaris 2.x

Operation	Requirements
Get OS Information	Execute-access uname , prtconf , psrinfo , vmstat
Get Configuration	<ul style="list-style-type: none"> • Read-access /etc/system • Execute-access ndd • Read-access to all directories that ndd accesses
Update Configuration	<ul style="list-style-type: none"> • Write-access /etc/system • Execute-access ndd • Read-access to all directories that ndd accesses
Start/Stop Service	Execute-access sync & reboot
Get Logs	<ul style="list-style-type: none"> • Read-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat • Write-access to /tmp
Clear Logs	<ul style="list-style-type: none"> • Delete-access to /var/log/syslog* • /var/adm/messages* • Execute-access netstat

Web Server: Apache 1.x / 2.x

Operation	Requirements
Get Configuration	Read-Access to <Apache>/conf/*.conf
Update Configuration	Write-Access to <Apache>/conf/*.conf
Start/Stop Service	Execute-access to user-defined scripts, or Apache.exe (on Windows) and apachectl (on Unix).
Get Logs	Read-Access to <ErrorLog> and <CustomLog> as defined in *.conf file.
Clear Logs	Delete-Access to <ErrorLog> and <CustomLog> as defined in *.conf file.

Web Server: IBM Httpd 1.x, 2.x

Operation	Requirements
Get Configuration	Read-Access to <IBMHttpd>/conf/*.conf
Update Configuration	Write-Access to <IBMHttpd>/conf/*.conf
Start/Stop Service	User-defined scripts or net start/stop (On Windows).
Get Logs	Read-Access to <ErrorLog> and <CustomLog> as defined in *.conf file.
Clear Logs	Delete-Access to <ErrorLog> and <CustomLog> as defined in *.conf file.

Web Server: iPlanet Enterprise Web Server 6.x

Operation	Requirements
Get Configuration	Read-access to magnus.conf , and jvm12.conf per iPlanet domain.
Update Configuration	Write-access to magnus.conf and jvm12.conf per iPlanet domain.
Start/Stop Service	<ul style="list-style-type: none"> • On Windows: startsvr.bat / stopsvr.bat under iPlanet domain directory. • On Unix: startsvr / stopsvr under iPlanet domain directory.
Get Logs	Read-access to access* , errors* files under <iPlanet Domain Home>/logs directory.
Clear Logs	Delete-access to access* , errors* files under <iPlanet Domain Home>/logs directory.

Web Server: Microsoft IIS 4/5/6 & ASP 2/3

Operation	Requirements
Get Configuration	Read-access to IIS://LocalHost/W3SVC metabase
Update Configuration	Update-access to IIS://LocalHost/W3SVC metabase
Start/Stop Service	net start/stop 'World Wide Web Publishing Service'
Get Logs	<ul style="list-style-type: none"> • Read-access to IIS://LocalHost/W3SVC (for <i>LogFileDirectory</i> parameter) • Read-access to <LogFileDirectory>/W3SVC*/*.log
Clear Logs	Delete-access to <LogFileDirectory>/W3SVC*/*.log

Web Application Server: Microsoft ASP.NET 1.x

Operation	Requirements
Get Configuration	Read-access to <ASP.NETCONFIGDir>/machine.config (web.config) Example: C:\WINNT\Microsoft.NET\Framework\v1.1.4322 (Found in Registry under HKLM\SOFTWARE\Microsoft\ASP.NET\)
Update Configuration	Write-access to <ASP.NETCONFIGDir>/web.config (machine.config) Example: C:\WINNT\Microsoft.NET\Framework\v1.1.4322 (Found in Registry under HKLM\SOFTWARE\Microsoft\ASP.NET\)
Start/Stop Service	net.exe start/stop 'World Wide Web Publishing Service'
Get Logs	<ul style="list-style-type: none"> • Read-access to <ASP.NETCONFIGDir>/machine.config (web.config) • Read-access to each log file dynamically obtained from above configuration file. • Read-access to user defined trace files.
Clear Logs	<ul style="list-style-type: none"> • Read-access to <ASP.NETCONFIGDir>/machine.config (web.config) • Delete-access to each log file dynamically obtained from above configuration file. • Delete-access to user defined trace files.

Web Application Server: Tomcat 2.x, 3.x

Operation	Requirements
Get Configuration	Read-access to <Tomcat>/conf/server.xml
Update Configuration	Write-access to <Tomcat>/conf/server.xml
Start/Stop Service	Execute-access to user-defined startup/shutdown scripts
Get Logs	Read-access to Access* , *.log, and *.txt files under <Tomcat>/logs directory
Clear Logs	Delete-access to Access* , *.log, and *.txt files under <Tomcat>/logs directory.

Web Application Server: WebLogic 6.x, 7.x, 8.x

Operation	Requirements
Get Configuration	Read-access to <WebLogicConfigDir>/<domain>/config.xml
Update Configuration	Write-access to <WebLogicConfigDir>/<domain>/config.xml
Start/Stop Service	Execute-access to user-defined scripts
Get Logs	Read-access to wl-domain.log , access.log , weblogic.log files under <WebLogicConfigDir>/<domain> directory.
Clear Logs	Delete-access to wl-domain.log , access.log , weblogic.log files under <WebLogicConfigDir>/<domain> directory.

Web Application Server: WebSphere Standalone (4.x)

Operation	Requirements
Get Configuration	Read-access to <WebSphereConfigDir>/*.xml
Update Configuration	Write-access to <WebSphereConfigDir>/*.xml
Start/Stop Service	Execute-access to user-defined scripts
Get Logs	<ul style="list-style-type: none"> • Read-access to plugin-cfg.xml found in the Windows Registry under <HKEY_LOCAL_MACHINE\\SOFTWARE\\IBM\\WebSphere Application Server>. • Read-access to each log file dynamically obtained from above configuration file. <WebSphereConfigDir>/server-cfg.xml • Read-access to each log file dynamically obtained from above configuration file. <WebSphereHomeDir>/logs/activity.log • Execute-access to <WebSphereHomeDir>/bin/showlog.bat (showlog.sh)
Clear Logs	<ul style="list-style-type: none"> • Read-access to plugin-cfg.xml found in the Windows Registry under <HKEY_LOCAL_MACHINE\\SOFTWARE\\IBM\\WebSphere Application Server>. • Delete-access to each log file dynamically obtained from above configuration file. • Read-access to <WebSphereConfigDir>/server-cfg.xml • Delete-access to each log file dynamically obtained from above configuration file. • Delete-access to <WebSphereHomeDir>/logs/activity.log

Web Application Server: WebSphere Enterprise (4.x)

Operation	Requirements
Get Configuration	Execute-access to <WebSphereHome>/bin/XMLConfig.bat (XMLConfig.sh) Read and Write access to /tmp directory
Update Configuration	Execute-access to <WebSphereHome>/bin/XMLConfig.bat (XMLConfig.sh) Read and Write access to /tmp directory
Start/Stop Service	Execute-access to user-defined scripts
Get Logs	<ul style="list-style-type: none"> • Read-access to <WebSphereHome>/bin/admin.config • Read-access to each log file dynamically obtained from above configuration file. • plugin-cfg.xml found in the Windows Registry under <HKEY_LOCAL_MACHINE\\SOFTWARE\\IBM\\WebSphere Application Server>. • Read-access to each log file dynamically obtained from above configuration file. <WebSphereHome>/properties/*.wascl files • Read-access to each log file dynamically obtained from above configuration file. <WebSphereHome>/logs/*FatalError.log <WebSphereHome>/logs/wssetup.log <WebSphereHome>/logs/activity.log> • Execute-access to <WebSphereHomeDir>/bin/showlog.bat (showlog.sh)

Operation	Requirements
Clear Logs	<ul style="list-style-type: none"> • Read-access to <WebsphereHome>/bin/admin.config • Delete-access to each log file dynamically obtained from above configuration files. • Read-access plugin-cfg.xml found in the Windows Registry under <HKEY_LOCAL_MACHINE\\SOFTWARE\\IBM\\WebSphere Application Server>. • Delete-access to each log file dynamically obtained from above configuration file. • Read-access <WebsphereHome>/properties/*.wascl files • Delete-access to each log file dynamically obtained from above configuration file. • Delete-access to <WebsphereHome>/logs/*FatalError.log <WebsphereHome>/logs/wssetup.log <WebsphereHome>/logs/activity.log>

Web Application Server: WebSphere (5.x)

Operation	Requirements
Get Configuration	Read-access to <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>/servers/<serverName>/server.xml
Update Configuration	Write-access to <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>/servers/<serverName>/server.xml
Start/Stop Service	Execute-access to user defined scripts
Get Logs	<ul style="list-style-type: none"> • Read-access to <WebsphereHome>/config/cells/<cellName>/variables.xml • Read-access to each log file dynamically obtained from above configuration file. • <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>variables.xml • Read-access to each log file dynamically obtained from above configuration file. • <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>/servers/<serverName>/variables.xml • Read-access to each log file dynamically obtained from above configuration file. • Read-access to <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>/servers/<serverName>/server.xml • Read-access to each log file dynamically obtained from above configuration file. • Execute-access to <WebsphereHome>/bin

Operation	Requirements
<p>Clear Logs</p>	<ul style="list-style-type: none"> • Read-access to <WebsphereHome>/config/cells/<cellName>/variables.xml • Delete-access to each log file dynamically obtained from above configuration file. • <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>variables.xml • Delete-access to each log file dynamically obtained from above configuration file. • <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>/servers/<serverName>/variables.xml • Delete-access to each log file dynamically obtained from above configuration file. • Read-access to <WebsphereHome>/config/cells/<cellName>/nodes/<nodeName>/servers/<serverName>/server.xml • Delete-access to each log file dynamically obtained from above configuration file. <p>Execute-access to <WebsphereHome>/bin</p>

Database: Microsoft SQL 7.5, 2000

Operation	Requirements
Get Configuration	MSSQL sp_configure
Update Configuration	MSSQL sp_configure
Start/Stop Service	net start/stop
Get Logs	Read-access to Error Log Directory (defined by MSSQLServer\Parameters "-e" argument)
Clear Logs	Delete-access to Error Log Directory (defined by MSSQLServer\Parameters "-e" argument)

Database: Oracle 8.x / 9.x

Operation	Requirements
Get Configuration	Read-access to "init.ora" files
Update Configuration	Write-access to "init.ora" files
Start/Stop Service	On Windows: "net start/stop OracleService<SID>" ; On Unix: "sqlplus internal" w/ Startup/Shutdown immediate command.
Get Logs	Read-access to <SID>'s bdump/ , udump/ , adump/ , cdump/ directories, and statspack output files.
Clear Logs	Delete-access to <SID>'s bdump/ , udump/ , adump/ , cdump/ directories, and statspack output files.

Database: IBM-DB2 7.x

Operation	Requirements
Get Configuration	Execute-access to db2cmd
Update Configuration	Execute-access to db2cmd
Start/Stop Service	Execute-access to User-defined startup/shutdown scripts
Get Logs	Execute-access to db2cmd for "DIAGPATH" Read-access to: <DIAGPATH>/db2diag.log <DIAGPATH>/db2alert.log <DIAGPATH>/t*.* <DB2HOME>/db2dump/*.* and *.log for each DB2 instances under 'Path to log files' directory.
Clear Logs	Delete-access to: <DIAGPATH>/db2diag.log <DIAGPATH>/db2alert.log <DIAGPATH>/t*.* <DB2HOME>/db2dump/*.* and *.log for each DB2 instances under 'Path to log files' directory.

ERP/CRM: Oracle 9iAS

Operation	Requirements
Get Configuration	<ul style="list-style-type: none"> • Read-access to <OracleHome>/opmn/conf/opmn.xml • Read-access to server.xml in paths grabbed from opmn.xml • Read-access to configuration files found in the configuration file above. • Read-access to data-sources.xml in server.xml path • Read-access to global-web-application.xml in server.xml path • Read-access to <OracleHome>/Apache/modplsql/conf/ plsql.conf
Update Configuration	<ul style="list-style-type: none"> • Write-access to <OracleHome>/opmn/conf/opmn.xml • Write-access to server.xml in paths grabbed from opmn.xml • Write-access to configuration files found in the configuration file above. • Write-access to data-sources.xml in server.xml path • Write-access to global-web-application.xml in server.xml path • Write-access to <OracleHome>/Apache/modplsql/conf/ plsql.conf
Start/Stop Service	Execute-access to user defined scripts

Operation	Requirements
<p>Get Logs</p>	<p>Read-access to <OracleHome>/opmn/conf/opmn.xml Read-access to each log file dynamically obtained from the above configuration file:</p> <ul style="list-style-type: none"> • <OracleHome>/network/ log/agntsrv.log • <OracleHome>/network/log/dbsnmp.log • <OracleHome>/network/log/nmicnf.log • <OracleHome>/network/log/*.nohup • <OracleHome>/webcache/logs/event_log • <OracleHome>/webcache/logs/access_log • <OracleHome>/dcm/logs/dcmctl_logs/log.xml • <OracleHome>/dcm/logs/emd_logs/log.xml • <OracleHome>/reports /logs/*.log • <OracleHome>/ldap/log/oidmon.log • <OracleHome>/opmn/logs/ons.log • <OracleHome>/opmn/logs/ipm.log • <OracleHome>/sysman/log/*.log • <OracleHome>/sysman/log/*.nohup

Operation	Requirements
Clear Logs	<p>Delete-access to <OracleHome>/opmn/conf/opmn.xml</p> <p>Delete-access to each log file dynamically obtained from the above configuration file:</p> <ul style="list-style-type: none"> • <OracleHome>/network/ log/agntsrv.log • <OracleHome>/network/log/dbsnmp.log • <OracleHome>/network/log/nmicnf.log • <OracleHome>/network/log/*.nohup • <OracleHome>/webcache/logs/event_log • <OracleHome>/webcache/logs/access_log • <OracleHome>/dcm/logs/dcmctl_logs/log.xml • <OracleHome>/dcm/logs/emd_logs/log.xml • <OracleHome>/reports /logs/*.log • <OracleHome>/ldap/log/oidmon.log • <OracleHome>/opmn/logs/ons.log • <OracleHome>/opmn/logs/ipm.log • <OracleHome>/sysman/log/*.log • <OracleHome>/sysman/log/*.nohup

ERP/CRM: PeopleSoft 8.x

Operation	Requirements
Get Configuration	<ul style="list-style-type: none"> • Read-access to <PSHOME>/peopletools.properties (if available) • Execute-access to <PSHOME>/appserv/psadmin • Read-access to <PSHOME>/appserv/<APP>/psappsrv.cfg
Update Configuration	<ul style="list-style-type: none"> • Write-access to <PSHOME>/appserv/<APP>/psappsrv.cfg • Execute-access to <PSHOME>/appserv/psadmin - configure
Start/Stop Service	Execute-access to <PSHOME>appserv/psadmin
Get Logs	Read-access to APPSRV*, TUXLOG*, *.TRACESQL, *.DMP under <PSHOME>/appserv/<APP>/LOGS directory.
Clear Logs	Delete-access to APPSRV*, TUXLOG*, *.TRACESQL, *.DMP under <PSHOME>/appserv/<APP>/LOGS directory.

ERP/CRM: SAP Enterprise Portals 6.x

Operation	Requirements
Get Configuration	Read-access to <ul style="list-style-type: none"> • <EP_PATH>/datafile/data/pcd.properties • <J2E_PATH>/configtool/service.ini • <SAP_SERVICEHOME>/managers/settings/*.managers • <SAP_SERVICEHOME>/services/*/properties
Update Configuration	Write-access to <ul style="list-style-type: none"> • <EP_PATH>/datafile/data/pcd.properties • <SAP_SERVICEHOME>/managers/settings/*.managers • <SAP_SERVICEHOME>/services/*/properties
Start/Stop Service	net start/stop "World Wide Web Publishing Service" and "SAP J2EE Engine Alone"
Get Logs	Read-access to <ul style="list-style-type: none"> • <EP_PATH>/datafile/data/pcd.properties • <J2E_PATH>/configtool/service.ini • <SAP_SERVICEHOME>/managers/settings/*.managers • <SAP_SERVICEHOME>/services/*/properties for list of paths to all SAP log file types. Read-access to each log file dynamically obtained from above configuration files.
Clear Logs	Delete-access to each log file dynamically obtained from SAP EP configuration files.

ERP/CRM: SAP R/3 4.x

Operation	Requirements
Get Configuration	Read-access to <SAPConfigDir>/*.PFL
Update Configuration	Write-access to <SAPConfigDir>/*.PFL
Start/Stop Service	Execute-access to user defined scripts
Get Logs	<ul style="list-style-type: none"> • Read-access to <SAPConfigDir>/*.PFL • Read-access to each log file dynamically obtained from above configuration files.
Clear Logs	<ul style="list-style-type: none"> • Read-access to <SAPConfigDir>/*.PFL • Delete-access to each log file dynamically obtained from above configuration files.

ERP/CRM: Siebel 7.x

Operation	Requirements
Get Configuration	Execute-access to <SIEBELHOME>siebsrvr/bin/srvrmgr
Update Configuration	Execute-access to <SIEBELHOME>siebsrvr/bin/srvrmgr
Start/Stop Service	<ul style="list-style-type: none"> • On Windows: net start/stop "Siebel Server [<enterprise>_<server>]"; • On Unix: start_server / stop_server under <SIEBELHOME>/siebsrvr/bin directory.
Get Logs	Read-access to SWEApp/log/ss*.log, <SIEBELHOME>/siebsrvr/log/*.log, and siebel_assert*, siebel_prefer*, siebel_crash* under <SIEBELHOME>/siebsrvr/bin directory.
Clear Logs	Delete-access to SWEApp/log/ss*.log, <SIEBELHOME>/siebsrvr/log/*.log, and siebel_assert*, siebel_prefer*, siebel_crash* under <SIEBELHOME>/siebsrvr/bin directory.

Uninstalling a Tuning Agent

The way you remove a tuning agent from a server depends on the way it was originally installed.

If you installed the tuning agent from the CD:

- Select **Start > Programs > Tuning Agent > Uninstall Tuning Agent Installation** and follow the onscreen instructions.

If you installed the tuning agent remotely from the Console machine, or by copying files from the Console machine to the remote machine:



- 1** Stop the tuning agent. (Click the server's icon in the Console's Configuration tab and click the **Stop Tuning Agent** button. When you are asked to confirm the action, click **Yes**.)
- 2** On the host machine, delete the tuning agent files from the appropriate location:
 - On a Windows machine, delete the directory `C:\Mercury Interactive\Tuning Agent\agent`. If you don't find the files there, you can find their location by checking the `PE_HOME` environment variable. Then delete the `PE_HOME` environment variable.
 - On a UNIX machine, delete the directory `/tmp/tuningagent`.

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