# LoadRunner®

*Installation Guide*
Windows and UNIX
Version 7.02

MERCURY INTERACTIVE

# Table of Contents

**PART II: UNIX INSTALLATION**

# Before You Install

Welcome to LoadRunner 7.0, Mercury Interactive's automated client/server testing tool for Windows 95/98, Windows NT, 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 Interactive or your local distributor.

### Compact Disc

Your LoadRunner package includes one compact disc that contains the LoadRunner program and associated files.
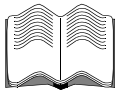
### Documentation

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

➤ install LoadRunner

➤ use the LoadRunner Controller

➤ create virtual user scripts

## 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 Interactive products. You will also be eligible for updates and upgrades.

To register your copy of LoadRunner, fill out the Mercury Interactive 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 Interactive or your local representative if you move to a new address, so that you can continue to receive product information and updates.



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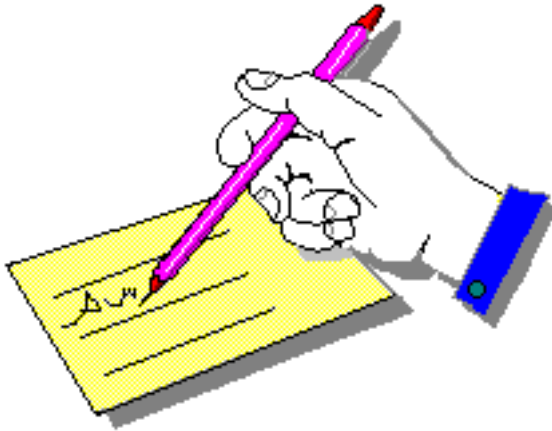
**Note:** You can also register your copy of LoadRunner on Mercury Interactive's Customer Support site (http://support.mercuryinteractive.com).

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## Where To Go From Here?

Your LoadRunner compact disc includes all the files that you need to install LoadRunner in any environment. 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 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...*

**Windows
only**
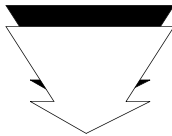
**Windows
& UNIX**

See
**Part I**
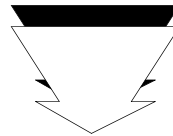
See
**Part I
Part II**

# Terminology

| | |
|---|---|
| **AUT** | The application under test. |
| **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 workstation used to host the LoadRunner Controller. |
| **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:

| | |
|---|---|
| **Bold** | **Bold** text indicates function names and the elements of the functions that are to be typed in literally. |
| *Italics* | *Italic* text indicates variable names and book names. |
| Helvetica | The Helvetica font is used for examples and statements that are to be typed in literally. |
| [ ] | Square brackets enclose optional parameters. |
| { } | Curly brackets indicate that one of the enclosed values must be assigned to the current parameter. |
| ... | In a line of syntax, three dots indicate that more items of the same format may be included. In a program example, three dots are used to indicate lines of a program that have been intentionally omitted. |
| \| | A vertical bar indicates that either of the two options separated by the bar should be selected. |

# Part I

## Windows Installation

# 1

# Introducing the Windows Installation

Your LoadRunner compact disc includes a setup program that guides you through the process of installing LoadRunner's components.

Two types of LoadRunner Windows installations are available:

**Standalone Installation** installs LoadRunner on the hard disk of a single-user computer. For details, see Chapter 2, "Installing LoadRunner on Your Computer."

**Network Installation** installs LoadRunner on a network drive, making LoadRunner available to all users who have access to that network drive. For details, see Chapter 3, "Installing LoadRunner on a Network." After LoadRunner is installed on a network, users can run a **Workstation Installation** to enable them to use a shared version of LoadRunner on the network. For details, see Chapter 4, "Installing LoadRunner on a Workstation."

With both of the above installation options, you can install the LoadRunner Controller, the virtual user components, or both.

# Windows System Requirements

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

| Requirement | Controller with On-line Monitors | Virtual Vuser Generator | Virtual Users | Analysis Module |
|---|---|---|---|---|
| **Computer/ Processor** | Pentium 300 MHZ or higher | Pentium 300 MHZ or higher | Pentium 500 MHZ CPU or higher | Pentium 300 MHZ or higher |
| **Operating System** | Windows NT service pack 3 or higher Windows 2000 | Windows NT service pack 3 or higher Windows 2000 | Windows NT service pack 3 or higher Windows 2000 | Windows 2000 |
| **Memory** | 64 MB or more | 128 MB or more | At least 1 MB RAM for non-multithreaded Vuser or at least 400 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 |
| **Free Hard Disk Space** | 200 MB | 200 MB | Minimum 500 MB | 200 MB |
| **Browser** | IE 4.x or higher Netscape Navigator 4.x | IE 4.x or higher Netscape Navigator 4.x | N/A | IE 4.x or higher Netscape Navigator 4.x |

# 2

## Installing LoadRunner on Your Computer

Before Installing LoadRunner 7.0, be sure to uninstall any previous versions of LoadRunner.

Two types of LoadRunner installations are available:

**Standalone Installation** installs LoadRunner on the hard disk of a single-user computer. For details, see this chapter.

**Network Installation** installs LoadRunner on a network drive, making LoadRunner available to all users who have access to that network drive. For details, see Chapter 3, "Installing LoadRunner on a Network."

You can install the Controller, virtual user components, or both. In addition, you can choose to install the full LoadRunner configuration, a load generator configuration, or a custom configuration. Choosing custom configuration lets you specify which LoadRunner components to install.

## Performing a Standalone Installation

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

**To install LoadRunner on your computer:**

**1** Insert the LoadRunner compact disc into a CD-ROM drive. If you are installing from a network drive, connect to that CD-ROM drive.

**2** Click **Start** and then 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** Click **OK**. The Installshield Wizard begins and displays the software licensing agreement.

**5** Read the agreement and click **Yes** to accept it. The LoadRunner Setup program begins and displays the Installation Type dialog box.
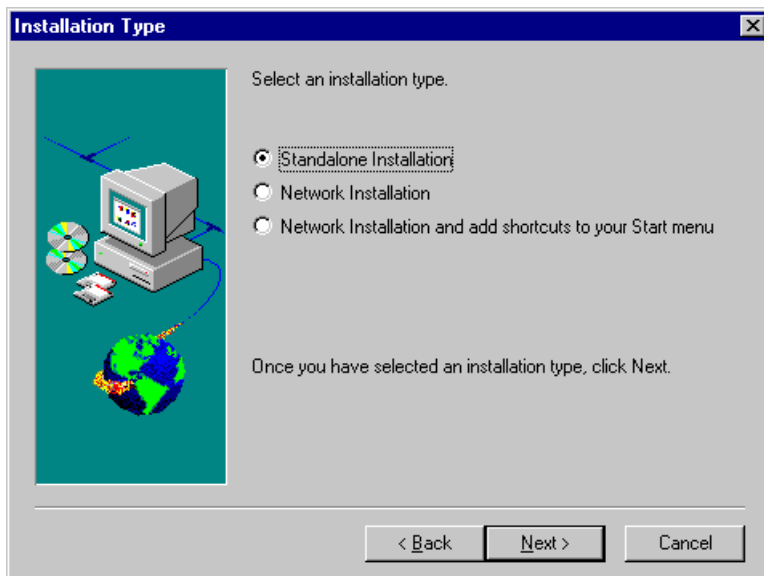
**6** Click **Standalone Installation**, and then click **Next**. The Setup Type dialog box displays three setup options.
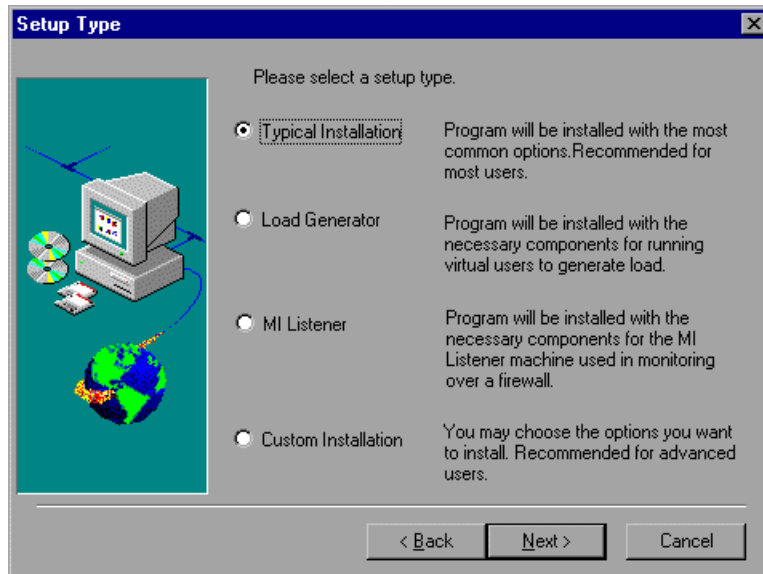


**7** Select the type of installation that you want: Full, Load Generator, MI Listener, or Custom.

**Full Installation** installs all commonly-used LoadRunner components including the LoadRunner Controller, GUI and DB Virtual User components, online documentation, and script samples. Use this option for the machine that controls the Vusers.

**Load Generator** installs only the components needed for running virtual users to generate load. Use this option for machines that are used only to generate load and not to control Vusers.

**MI Listener** installs the components needed on the MI Listener machine used in monitoring over a firewall. For more information about monitoring over a firewall, refer to the *LoadRunner Controller User's Guide*.

**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 14.

 **8** Click **Next** to proceed with the setup, and display the Choose Destination
 Location dialog box.
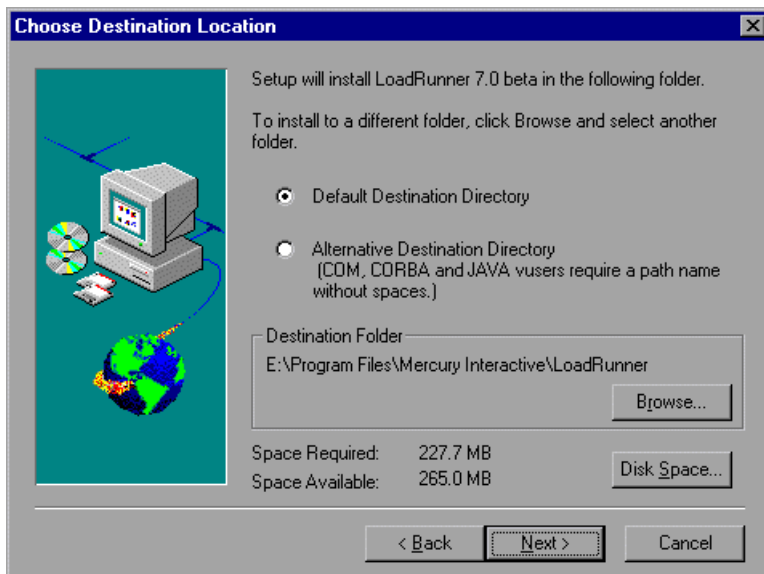


 **9** Choose whether to install LoadRunner in a default destination directory or
 an alternative destination directory. COM, CORBA and JAVA vusers require
 the alternative directory path name which has no spaces.

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

**11** Click **Next** to proceed. The LoadRunner License dialog box appears.
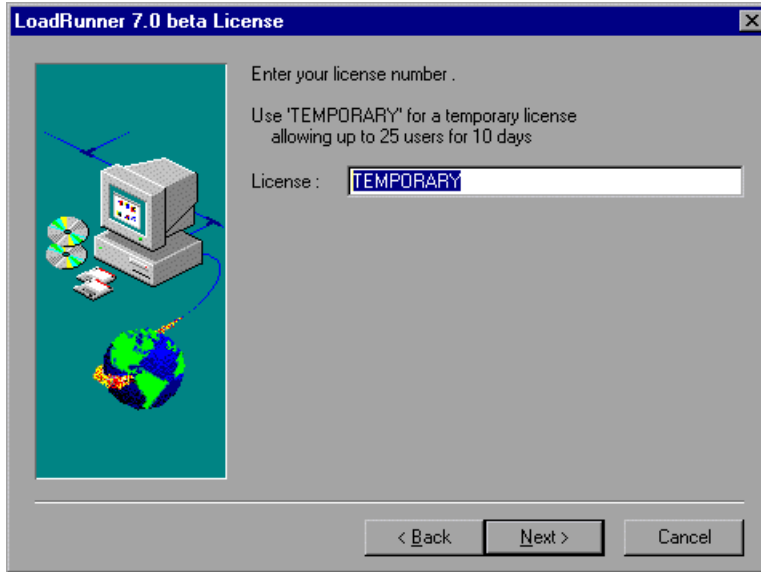


**12** Enter the LoadRunner license code from your license agreement. If you are evaluating LoadRunner or waiting for a permanent license key, enter the license key *TEMPORARY*. This will let you run up to 25 virtual users for a period of 10 days.

**13** Click **Next** to proceed. If you have a temporary license, LoadRunner issues a reminder indicating that you have 10 days to evaluate the product. Click **OK**.

**14** The Registration Information dialog box appears.
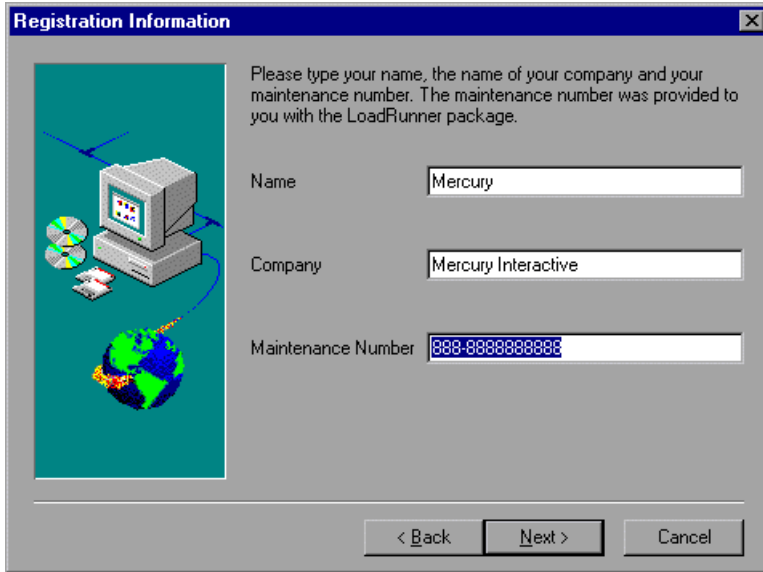


**15** In the Registration Information dialog box, type your name, the name of your company, and your LoadRunner serial/maintenance number. You can find the maintenance number in the maintenance pack shipped with LoadRunner.

**16** Click **Next**. Your registration information appears in a read-only dialog box. Check that the information is correct.

Click **No** to return to the previous dialog box to modify the registration information as necessary.

Click **Yes** to confirm that the details are correct and to continue with the installation process.

**17** The Select Program Folder dialog box appears.
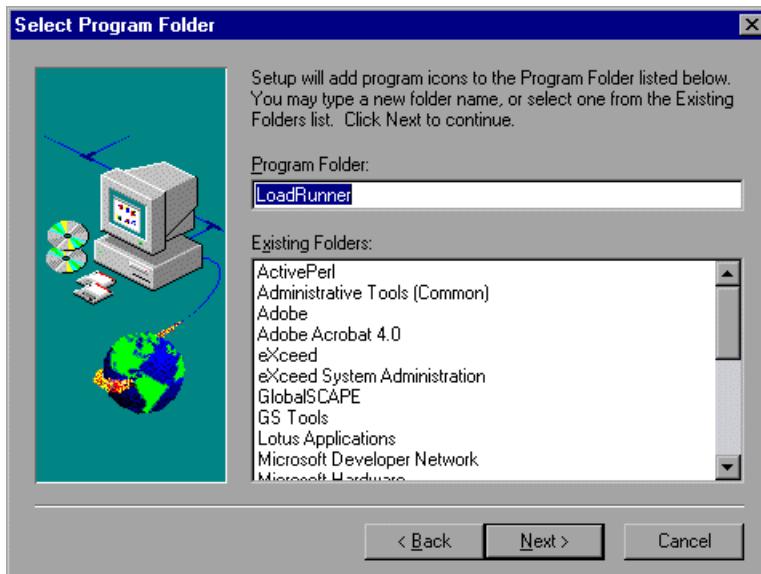


**18** In the Select Program Folder dialog box, specify a program folder, or accept the default folder, *LoadRunner*.

**19** Click **Next** to proceed. 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.
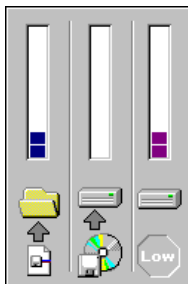


**20** If you installed LoadRunner's samples, a message tells you to run the samples setup from the LoadRunner Samples program group to complete the samples installation. See Chapter 8, "Installing LoadRunner Samples" for explanations of the sample tests and setup instructions.

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

**21** If you installed LoadRunner's online documentation, a message tells you to run the Acrobat Reader setup after the LoadRunner setup is complete. You use the Acrobat Reader to view the LoadRunner online documentation. Install the Acrobat Reader by selecting:

Start > Programs > LoadRunner > Documentation > Acrobat Reader Setup

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**Note**: The Acrobat Reader setup installs the Acrobat 4.0 Reader with search capabilities. If you already have this version of the Acrobat Reader installed, it is not necessary to run the Acrobat Reader setup.

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**22** Click **OK** to continue with the setup procedure. The User Login Settings dialog box appears.
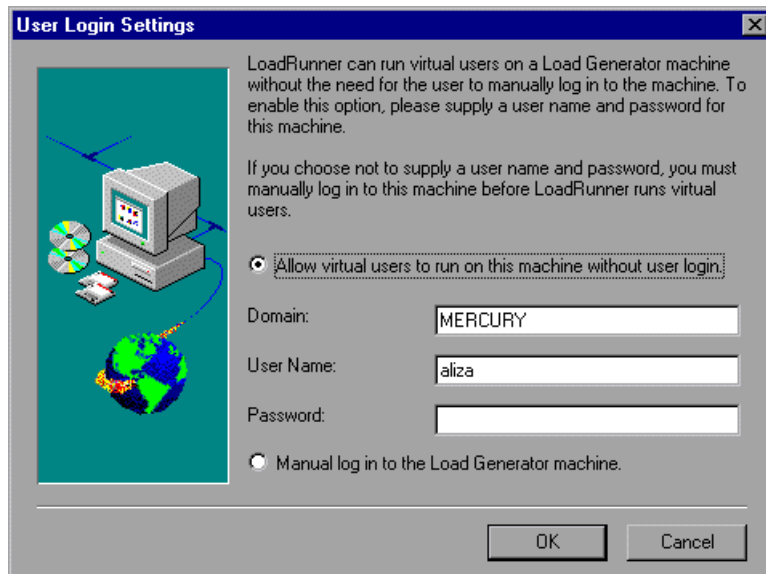


**23** Select the user login settings you want:

**Allow virtual users to run on this machine without user login.** LoadRunner will automatically log into 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 you must have administrator privileges.

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

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**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**.

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

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**Note:** The following message appears the first time that a user logs on after a full standalone 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.

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The LoadRunner standalone installation is now complete.

## Completing the LoadRunner Installation Process

**To complete the LoadRunner installation process:**

➤ Select **Start** > **Programs** > **LoadRunner** > **Readme** to see what's new in LoadRunner, and any last-minute limitations.

➤ To install the Adobe Acrobat Reader 4.0, select:

Start > Programs > LoadRunner > Documentation > Acrobat Reader Setup

➤ To complete LoadRunner's sample installation, run the Samples setup after LoadRunner setup is complete. Refer to Chapter 8, "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 into 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** > **LoadRunner** > **Controller**.

## 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:

➤ **Controller:** Controls the execution of scenarios and Vuers.

➤ **GUI Vusers:** Scripts emulating users operating on a graphical user interface.

➤ **Vusers:** Scripts emulating users without a graphical user interface by using direct function calls. See the Read Me file for supported protocols.

➤ **Vuser Generator:** LoadRunner's tool for creating Vuser scripts, through recording.

➤ **In-depth Performance Analysis:** Graphs and reports containing information about the test execution.

➤ **Online Documentation:** All user guides in Acrobat format.

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

➤ **Load Generator:** The components necessary for running virtual users to generate load.

➤ **Astra LoadTest for LoadRunner Installation:** The components necessary for installing the Astra LoadTest Virtual User Recorder for users with existing Astra tests. For installation instructions, refer to Chapter 6, "Installing Astra LoadTest for LoadRunner."

➤ **Monitors over FireWall:** Components on the agent machine for monitoring over the firewall.

➤ **MI Listener Component:** Components for the MI Listener machine used in monitoring over the firewall.



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

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

# 3

# Installing LoadRunner on a Network

Two types of LoadRunner installations are available:

**Standalone Installation** installs LoadRunner on the hard disk of a single-user computer. For details, see Chapter 2, "Installing LoadRunner on Your Computer."

**Network Installation** installs LoadRunner on a network drive, making LoadRunner available to all users who have access to that network drive. For details, see below.

After LoadRunner is installed on a network, users can run a **Workstation Installation** to enable them to use a shared version of LoadRunner on the network. For details, see Chapter 4, "Installing LoadRunner on a Workstation."

This chapter describes how to install the Controller, virtual user components, or both. In addition, you can choose to install the full LoadRunner configuration, a load generator configuration, or a custom configuration. Choosing custom configuration lets you specify which LoadRunner components to install.

## Performing a Network Installation

You can install LoadRunner on a network so that multiple users can access the same copy of LoadRunner. To install LoadRunner on a network, perform the following main steps:

➤ Run the setup program to install LoadRunner on the network.

➤ Run the workstation setup program at each workstation to install the LoadRunner icons on the individual desktops.

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

**To install LoadRunner on a network:**

**1** Insert the LoadRunner compact disc into a CD-ROM drive. If you are installing from a network drive, connect to that CD-ROM drive.

**2** Click **Start** and then select **Run**.

**3** Type the location that you are installing from, followed by *setup.exe*. For example, type:

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

**4** Click **OK**. The Installshield Wizard begins and displays the software licensing agreement.

**5** Read the agreement and click **Yes** to accept it.The LoadRunner Setup program begins and displays the Installation Type dialog box.
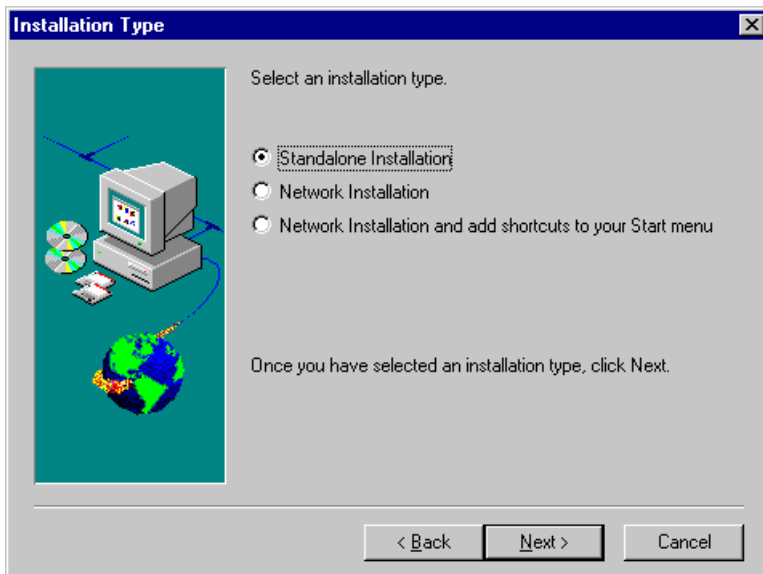
**6** Click one of the network installation options:

**Network Installation** installs LoadRunner on a network drive, but does not configure your workstation to run LoadRunner.

**Network Installation and add shortcuts to your Start menu** installs LoadRunner on a network drive and also configures your workstation to run LoadRunner.

**7** Click **Next** to proceed. The Setup Type dialog box displays three setup options.
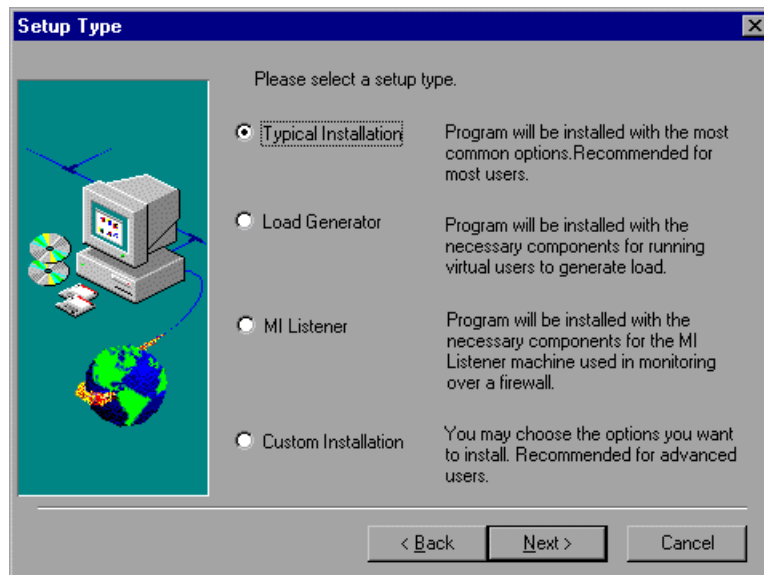


**8** Select the type of installation that you want: Full, Load Generator, or Custom.

**Full Installation** installs all commonly-used LoadRunner components including the LoadRunner Controller, GUI and DB Virtual User components, online documentation, and script samples. Use this option for the machine that controls the Vusers.

**Load Generator** installs only the components needed for running virtual users to generate load. Use this option for machines that are used only to generate load and not to control Vusers.

**MI Listener** installs the components needed on the MI Listener machine used in monitoring over a firewall. For more information about monitoring over a firewall, refer to the *LoadRunner Controller User's Guide (Windows)*.

**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 26.

**9** Click **Next** to proceed with the setup and display the Choose Destination Location dialog box.
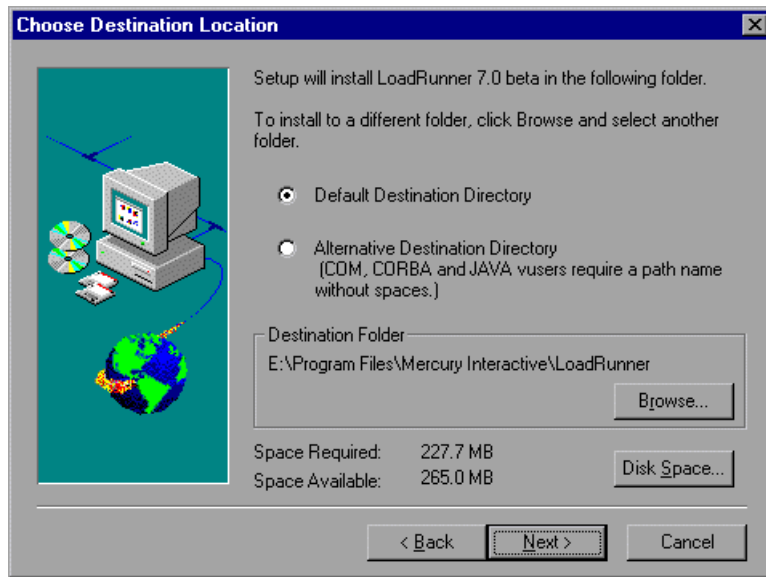


**10** Choose whether to install LoadRunner in a default destination directory or an alternative destination directory. COM, CORBA and JAVA vusers require the alternative directory path name which has no spaces.

**11** Select the directory on your network in which the setup program will install LoadRunner. To install LoadRunner in a location other than the default, click **Browse**, choose a directory, and then click **OK**.

**12** Click **Next** to proceed. The LoadRunner License dialog box opens.
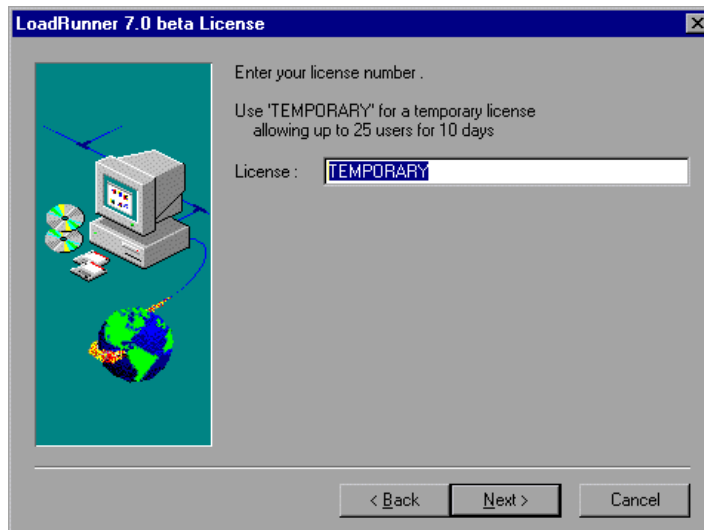


**13** Enter the LoadRunner license code from your license agreement. If you are evaluating LoadRunner or waiting for a permanent license key, enter the license key *TEMPORARY*. This will let you run up to 25 virtual users for a period of 10 days.

**14** Click **Next** to proceed. If you have a temporary license, LoadRunner issues a reminder indicating that you have 10 days to evaluate the product. Click OK.

**15** Click **OK** to proceed. The Registration Information dialog box appears.
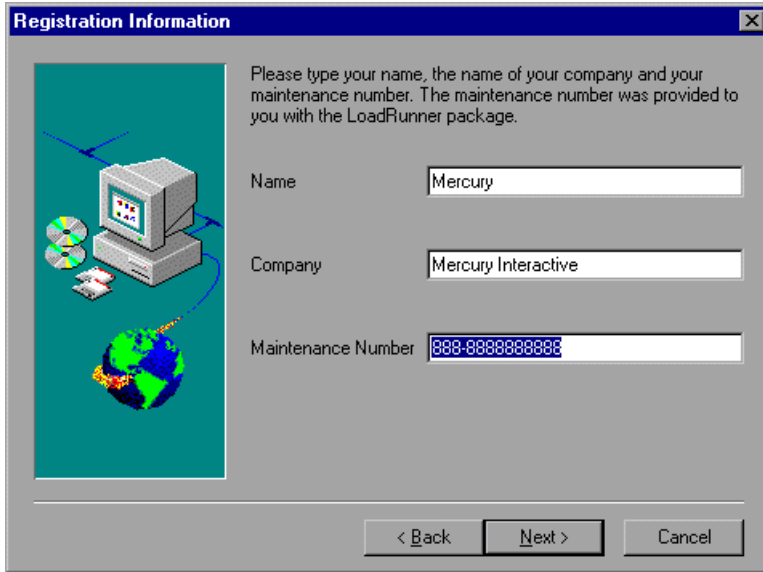


**16** In the Registration Information dialog box, type your name, the name of your company, and your LoadRunner serial/maintenance number. You can find the maintenance number in the maintenance pack shipped with LoadRunner.

**17** Click **Next**. Your registration information appears in a read-only dialog box. Check that the information is correct.

Click **No** to return to the previous dialog box to modify the registration information as necessary.

**18** Click **Yes** to confirm that the details are correct and to continue with the installation process.

**19** If you selected **Network Installation and add shortcuts to your Start menu** earlier in the installation, the Select Program Folder dialog box appears. In

the Select Program Folder dialog box, specify a program folder, or accept the default folder, *LoadRunner*. Click **Next** to proceed**.**
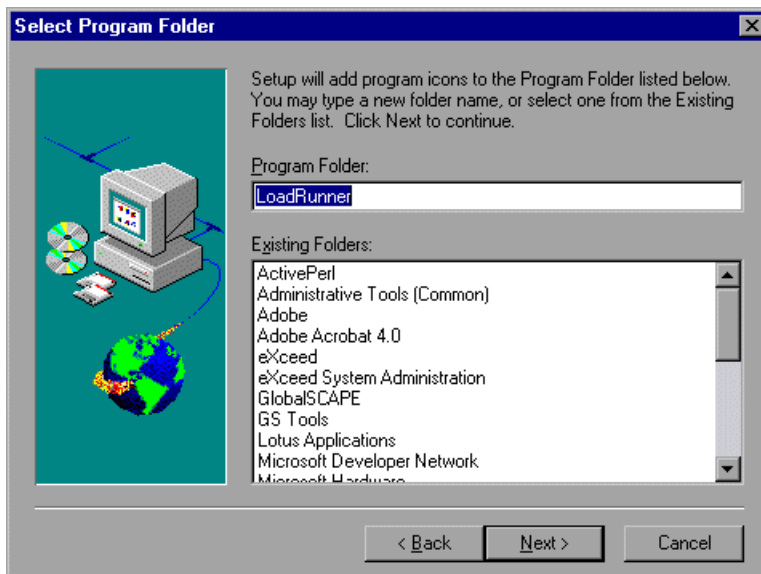


**20** The installation settings you selected are displayed in a read-only window. Review the settings. If you to want to select different installation settings, click **Back**. If you are satisfied with the installation settings, click **Next**. The installation process begins.
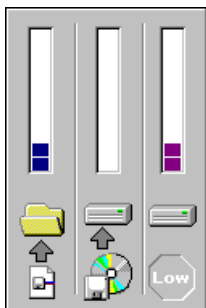


**21** If you installed LoadRunner's samples, a message tells you to run the samples setup from the LoadRunner Samples program group to complete the samples installation. Refer to Chapter 8, "Installing LoadRunner

Samples" for detailed explanations of the sample tests and setup instructions.

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

**22** If you installed LoadRunner's online documentation, a message tells you to run the Acrobat Reader setup after the LoadRunner set up is complete. You use the Acrobat Reader to view LoadRunner's online documentation.

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**Note:** The Acrobat Reader setup installs the Acrobat 4.0 Reader with search capabilities. If you already have this version of the Acrobat Reader installed, it is not necessary to run the Acrobat Reader setup.

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

**23** If you selected **Network Installation and add shortcuts to your Start menu** earlier in the installation, the User Login Settings dialog box appears.
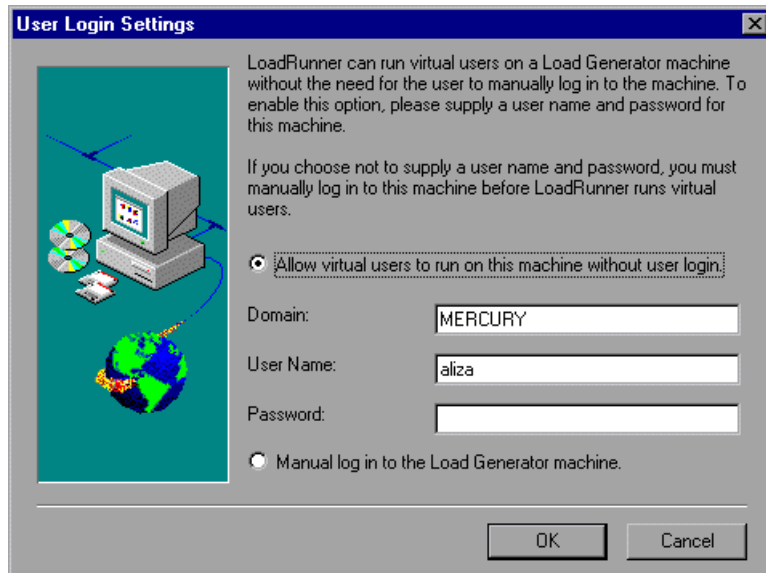


**24** Select the user login settings you want:

**Allow virtual users to run on this machine without user login.** LoadRunner will automatically log the Vusers running on the load generator machine

into the network. Supply the network domain where the user machine resides, a user name, and password. Note that you must have administrator privileges.

---

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

---

**Manual log in to the Load Generator machine.** The user must manually log in to the load generator for each session of running Vusers.

Click **OK**.

**25** The setup program prompts you to restart your computer. You can delay restarting your computer until a later time.

## Completing the LoadRunner Installation Process

If you selected **Install on Network and add shortcuts to your Start menu** during the installation:

➤ Select **Start** > **Programs** > **LoadRunner** > **Readme** to see what's new in LoadRunner, and any last-minute limitations.

➤ To install the Adobe Acrobat Reader 4.0, select
**Start** > **Programs** > **LoadRunner** > **Documentation** > **Acrobat Reader Setup**

➤ To complete LoadRunner's sample installation, run the Samples setup after the LoadRunner setup is complete. Refer to Chapter 8, "Installing LoadRunner Samples" for detailed 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 into the parallel port.

➤ To create scripts for **Baan** applications, you need to specify the location of the 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** > **LoadRunner** > **Controller**.

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**Note:** You must now perform a workstation installation of LoadRunner on all computers on which you want to run the network installation of LoadRunner. For details see Chapter 4, "Installing LoadRunner on a Workstation."

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## Custom Installation Options

If you choose 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:

➤ **Controller:** Controls the execution of scenarios and tests.

➤ **GUI Vusers:** Scripts that emulate users operating on a graphical user interface.

➤ **Vusers:** Scripts that emulate users without a graphical user interface by using direct function calls. See the Read Me file for supported protocols.

➤ **Vuser Generator:** LoadRunner's tool for creating Vuser scripts, through recording.

➤ **In-depth Performance Analysis:** Graphs and reports containing information about the test execution.

➤ **Online Documentation:** All user guides in Acrobat format.

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

➤ **Load Generator:** The components necessary for running virtual users to generate load.

➤ **Astra LoadTest for LoadRunner Installation:** The components necessary for installing the Astra LoadTest Virtual User Recorder for users with existing

Astra tests. For installation instructions, refer to Chapter 6, "Installing Astra LoadTest for LoadRunner."

➤ **Monitors over FireWall:** Components on the agent machine for monitoring over the firewall.

➤ **MI Listener Component:** Components for the MI Listener machine used in monitoring over the firewall.



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

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

# 4

# Installing LoadRunner on a Workstation

Two types of installation are available:

**Standalone Installation** installs LoadRunner on the hard disk of a single-user computer. For details, see Chapter 2, "Installing LoadRunner on Your Computer."

**Network Installation** installs LoadRunner on a network drive, making LoadRunner available to all users who have access to that network drive. For details, see Chapter 3, "Installing LoadRunner on a Network."

After LoadRunner is installed on a network, users can run a **Workstation Installation** to enable them to use a shared version of LoadRunner on the network. For details, see below.

## Performing a Workstation Installation

A workstation installation must be performed for each workstation that will run LoadRunner from the network. The workstation installation can be performed only after the network installation is successfully completed.

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

**To perform a workstation installation:**

**1** Click **Start** and then select **Run**. In the **Open** box, type:

> *installation_directory*\setup\setup.exe

where *installation_directory* is the location on the network in which you installed the LoadRunner setup files.

**2** Click **OK**.

**3** In the User Information dialog box, type your name and click **Continue**.

**4** The registration information appears in a read-only dialog box. Check that the information is correct.

Click **No** to return to the previous dialog box in order to modify the registration information.

Click **Yes** to confirm that the details are correct and to continue the installation process.

If you are installing LoadRunner on Windows NT, and your license requires that you use a plug when running LoadRunner, a message will appear at this point stating that you must be an NT Administrator to continue the setup process.

A message states that the setup program will create a LoadRunner program group on your desktop and will install a few LoadRunner files on your hard drive. Setup will also create a Common directory. The Common directory will be used to store common files on your computer, when you install other Mercury Interactive products.

**5** Click **Next**.

**6** 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. See Chapter 8, "Installing LoadRunner Samples" for detailed explanations of the sample tests and setup instructions.

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

**7** If you installed LoadRunner's online documentation, a message tells you to run the Acrobat Reader setup after the LoadRunner setup is complete. You use the Acrobat Reader to view LoadRunner's online documentation.

---

**Note:** The Acrobat Reader setup installs the Acrobat 4.0 Reader with search capabilities. If you already have this version of the Acrobat Reader installed, it is not necessary to run the Acrobat Reader setup.

---

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

**8** By default, the setup program creates the program group, LoadRunner, and adds the LoadRunner icons to the group.

**9** If you prefer to add the LoadRunner icons to an existing program group, select the group from the list. Click **Next** to proceed.

**10** The setup program prompts you to restart your computer. You can delay restarting your computer until a later time.

## Completing the LoadRunner Installation Process

**To complete the installation process:**

➤ Select **Start** > **Programs** > **LoadRunner** > **Readme** to see what's new in LoadRunner, and any last-minute limitations.

➤ To install the Adobe Acrobat Reader 4.0, select
**Start** > **Programs** > **LoadRunner** > **Documentation** > **Acrobat Reader Setup**

➤ To complete LoadRunner's sample installation, run the Samples setup after the LoadRunner setup is complete. Refer to Chapter 8, "Installing LoadRunner Samples" for detailed 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 into the parallel port.

➤ To create scripts for **Baan** applications, you need to specify the location of the application server in the Baan user file:

The user file, u[username], is located under the Baan installation directory 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** > **LoadRunner** > **Controller.**

# 5

# 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 Insert the LoadRunner compact disc 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
```

4 Click **OK**. The Installshield Wizard begins and displays the software licensing agreement.

5 Read the agreement and click **Yes** to accept it. The LoadRunner setup program starts.

6 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.

7 Click **Next**. The registration information appears in a read-only dialog box. Check that the information is correct.

Click **No** to return to the previous dialog box in order to modify the registration information.

Click **Yes** to confirm that the details are correct and to continue the installation process.

**8** Select your installation type: **Standalone** or **Network**, and then click **Next**.

**9** Click **Custom Installation**, and then click **Next**.

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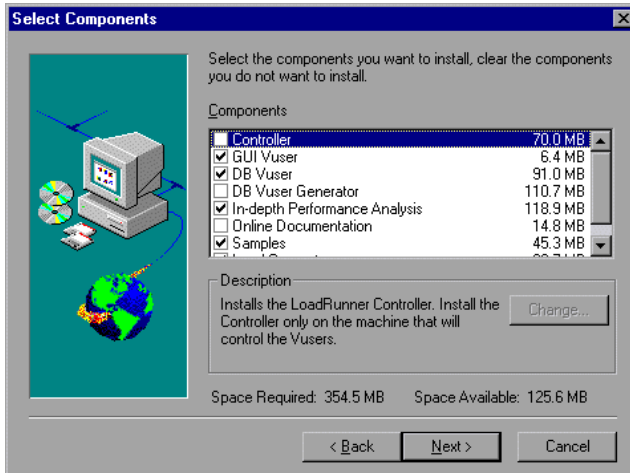


**10** Click **Next**. The installation settings you selected are displayed in a read-only window. Review the settings. If you want to select different installation settings, click **Back**. If you are satisfied with the installation settings, click **Next**. The installation process begins.

**11** 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 8, "Installing LoadRunner Samples" for detailed explanations of the sample tests and setup instructions.

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

**12** If you installed LoadRunner's online documentation, a message tells you to run the Acrobat Reader setup after the LoadRunner set up is complete. You use the Acrobat Reader to view LoadRunner's online documentation.

---

**Note:** The Acrobat Reader setup installs the Acrobat 4.0 Reader with search capabilities. If you already have this version of the Acrobat Reader installed, it is not necessary to run the Acrobat Reader setup.

---

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

**13** 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**.

**14** Depending on which components you added, the setup program either prompts you to restart your computer or informs you that the setup is complete. In the case that you have to restart your computer, you can delay it until a later time.

# 6

# Installing Astra LoadTest for LoadRunner

After you install LoadRunner, you can run the setup program at any time to install Astra LoadTest Virtual User Recorder. This allows existing Astra LoadTest customers to upgrade scripts created with Astra LoadTest to work in the LoadRunner environment. For more information on Astra LoadTest and the Astra product family , refer to http://www.astratryandbuy.com.

## Preparing the Astra LoadTest Installation

If you want to run Astra LoadTest Vusers from a LoadRunner Controller, you must install the Astra LoadTest Recorder on the injector machines.

➤ If you preformed a full installation, then the Astra LoadTest installation files already exist on your computer, and you can proceed to the installation instructions.

➤ If you performed a custom installation, and did not include the Astra LoadTest Installation option, then run the custom installation again, and select this option.

## Installing Astra LoadTest

**To install AstraLoad Test:**

**1** Run **Start Menu**>**Programs**>**LoadRunner**>**Tools**>**Astra LoadTest for LoadRunner Setup**.

> **Note:** This menu item will not exist if you ran an Injector Machine installation. In this case, run *Astra LoadTest for LoadRunner Setup* directly from the LoadRunner installation disk.

**2** Make sure to supply a destination directory that is different from the LoadRunner directory. Astra LoadTest and LoadRunner should not reside in the same directory.

**3** Accept the default settings for all of the installation screens.

# 7

# Viewing and Modifying a License

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

➤ Viewing License Information

➤ Modifying a License

➤ Troubleshooting

Normally, you enter your license code during installation. The setup program prompts you for a license code. If you do not have your license code at the time of installation, you can use the temporary license by typing "TEMPORARY" in the license code box. This grants you a ten day license for twenty-five users.

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

## Viewing License Information

You can only view license information from the LoadRunner Controller, not from the Virtual User Generator.

**To view the current license information:**

 **1** In the Controller, choose **Help** > **About LoadRunner**, and click **License Info**. The License dialog box opens, displaying the license information.

 **2** Scroll through the license information to determine the scope of your current license.
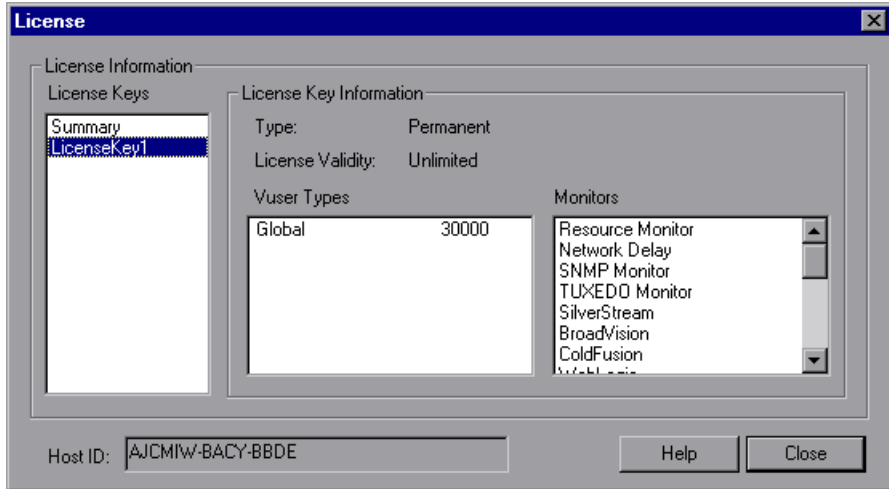
The License Keys box lists all the available license keys. In addition, you can select to view a summary of all the information in all the license keys.

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 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.

The following types of monitors are available: System Resources, Web Resources, Web Server Resources, Web Application Server Resources, Database Server Resources, Network Delay, Streaming Media Resources, Firewall Server Resources, and ERP Server Resources.

The Host ID box displays an ID for a specific machine. To receive a license key for a specific machine contact Mercury Interactive's Customer Support.

## Modifying a License

You can only modify license information from the LoadRunner Controller, not from the Virtual User Generator.

**To modify the current license information:**

**1** In the Controller, choose **Help** > **About LoadRunner**. The About LoadRunner window opens.

**2** Click the **New License** button. The New LoadRunner License dialog box opens.
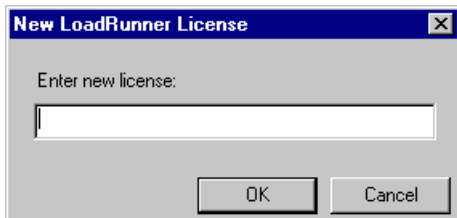


**3** Enter the new license number exactly as it was given to you. Click **OK**. If your license is limited for a specific amount of time, LoadRunner issues a message accordingly.

**4** Click **OK** to close the About LoadRunner window.

## Troubleshooting

**After LoadRunner installation, contact Mercury Interactive's Customer Support to obtain your permanent license key.**

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

➤ Make sure you typed in the license code exactly as it was given to you. Your license code 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 directory.

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**.

# 8

# Installing LoadRunner Samples

This chapter describes how to complete the LoadRunner sample installation. This chapter discusses:

➤ Setup Program

➤ Setup Procedure

➤ WinSock Sample Installation

➤ Sample Vuser Scripts

## About LoadRunner Samples

The LoadRunner samples include:

➤ Sample Vuser scripts

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

➤ Sample client application

The sample client 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.

➤ 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.

# 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 Flights application, on the Quadbase server or one of the other specified servers.

➤ 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 Flights application.

➤ Registers the datasource for Flights-ODBC_Access and Flights-Winsock with the ODBC Administrator.

➤ Adds icons for the LoadRunner Samples program group.

# 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.
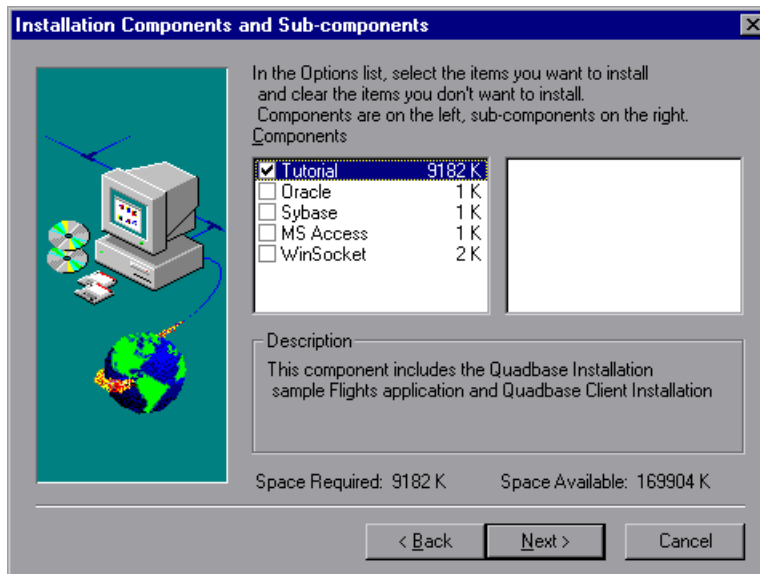


**4** Select one or more components and click **Next** to proceed with the setup and display the Choose Destination Location dialog box.

**5** Choose the location where you want to install the sample program, scripts and the sample Quadbase server and client (for the Tutorial, if selected). To select a different location, click **Browse** and choose a directory

Click **Next** to proceed.

**6** If you chose to install the Tutorial samples, you will be prompted to choose a program folder for the QuadBase database server and client. Choose a folder and click **Next** to proceed.

The setup program will create a new Quadbase program group and icons.

**7** 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 ServerName, Password and User Name fields will be filled with the most recent information, if available on your system.
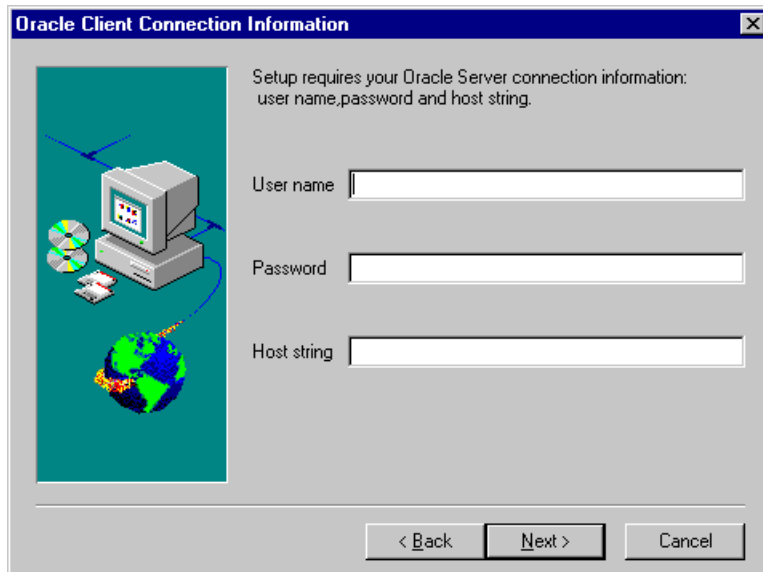


ODBC_access will display the default "flight32lr" and try to register it as a DSN with ODBC.

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

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

Click **Next** to continue the Samples setup.

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

**10** After all of the tables are created, you will receive a prompt that setup is complete. Click **Finish** to close the setup program and view the new program icons.

---

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

---

# WinSock Sample Installation

The sample Flights application comes with a Flights Socket server "SockFrs," which uses an Access database to provide Windows Socket communication.

Access database should be installed and registered as a datasource before installing the sample WinSock connection.

SockFrs opens a single connection to Access at start-up, and creates a thread for each Vuser.

You cannot uninstall tables for WinSock because the same tables may be used for ODBC_Access users.

# Sample Vuser Scripts

The sample scripts were created by recording the Flight Reservation System application using the Virtual User Generator. Many of the scripts were also enhanced with programming elements.

During installation, the sample Vuser scripts are copied to your local drive, in the *vusers* directory under the LoadRunner installation. The default location is *C:\Program Files\Mercury Interactive\LoadRunner\vusers*.

All scripts connect to the database in the *vuser_init* section and disconnect in *vuser_end* section. The run-time settings specify an eight second limit on think time, and all think times are placed outside of the transactions. The log mode is extended with viewing parameter data. This enables the user to see the parameter values which were substituted during the run.

The first line of each script, **lr_output_message**, will be placed in comments after the first run of the installation program.

## Tutorial Samples

The scripts used in the LoadRunner Tutorial emulate typical users of the Flight Reservation System. These scripts were created using the Flight Reservation System connected to a QuadBase server. You can find these scripts in the *Program Files\Mercury Interactive\LoadRunner\samples\tutorial\* directory.

**Frequent** emulates the typical activities of a Frequent Flyer agent. It illustrates the use of parameters. This script has two transactions:

| | |
|---|---|
| *mileage* | measures the time it takes to request customer mileage for a specific customer. The script checks the mileage for two customers, without parameterization. |
| *bonus* | measures the time it takes to generate a bonus list of customers with at least the specified mileage. The mileage is parameterized. |

**Manage** emulates the typical activities of a Flight Reservation Manager. It has three transactions:

| | |
|---|---|
| *report* | measures the time it takes to generate a sales report for the current agent. |
| *graph* | measures the time it takes to generate a sales graph for the current agent. |
| *top_sales* | measures the time it takes to calculate the most profitable sales period. |

**Manage_p** emulates the typical activities of a Flight Reservation Manager working in privileged mode. The transactions are the same as the regular manager, but before each query is executed, all tables are locked so the privileged user has exclusive control of the tables. The tables are released after each query execution. The purpose of this privileged mode is to illustrate the performance differences between the regular managers and a privileged user.

**Reserve1** emulates the typical activities of a flight reservation agent. It illustrates the use of parameters. All three of the transactions use the same order number:

| | |
|---|---|
| *insert* | measures the time it takes to insert a new order, with parameterization on the order number. (Inserted orders will start from 400 to prevent collisions) |
| *update* | measures the time it takes to update an order. |
| *delete* | measures the time it takes to remove an order. |

**Reserve2** emulates some of the typical activities of a flight reservation agent, with parameters. This script performs the same actions as the guires2 GUI Vuser script. It has two transactions:

*open_order* measures the time it takes to open an existing order, with parameterization on the order number.

*update_order*measures the time it takes to update the order.

**Guires2** is a WinRunner script which emulates an end user performing the typical activities of a flight reservation agent. This script performs the same actions as the Reserve2 script, but since it runs on the client flight reservation system, the transaction measurements include GUI response time.

## Oracle Samples

These scripts were recorded with the Virtual User Generator using the Flight Reservation System connected to an Oracle server. They are located in the *\samples\oracle\* directory.

**Correlate** illustrates the use of a correlated query and the use of **lrd_on_error_continue** for error handling. It has one transaction:

| | |
|---|---|
| *new_order* | measures the time it takes to insert a new order into database. |

This script uses a correlated query to assign the next available order number to the new order (returned from Select max(order_number) + 1 from orders).

The script implements **lrd_on_error_continue** to assure that execution will continue in the case of a SQL error.

This script illustrates how insert/delete statements can cause errors, and that it is important to handle these errors. For example, an error can occur when many users retrieve the same new order number. Remember that the purpose of running Vusers is to emulate real users and generate load on the server. This script illustrates that if some users are handling errors while others are performing insert/delete, they are still generating load even if they are not necessarily executing exactly the same actions.

**Freqora** is a simple script with no parameterization. Use this script as a general test to demonstrate a LoadRunner scenario. It has two transactions:

| | |
|---|---|
| *mileage* | measures the time it takes to request customer mileage for a specific customer. |
| *bonus* | measures the time it takes to generate a bonus list of customers with at least the specified mileage. |

**Pacing** illustrates how C functions can enhance a recorded script with loops and random pacing for emulating a human user. It also uses the **lr_output_message** and **lr_whoami** functions to check and report the user's current state. This script has two transactions:

| | |
|---|---|
| *open_order* | measures the time it takes to open an order by number. |
| *top_sales* | measures the time it takes to calculate the most profitable sales period. |

This Vuser script disables logging to improve performance. The random pacing ranges from 60 to 80 seconds.

**Param** illustrates the use of parameterization. It has 2 transactions:

| | |
|---|---|
| *open_order* | measures the time it takes to open an existing order, with parameterization on order number. |
| *update_order* | measures the time it takes to update the order. |

# Part II

## UNIX Installation

# 9

# Introducing the UNIX Installation

This chapter discusses the system requirements for the LoadRunner Virtual User components. The first section discusses the operating systems and hardware. The next section describes the memory requirements.

Your actual memory requirements may vary, depending on your configuration. Note that installation procedure uses additional memory which becomes free after the installation.

## System Requirements

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

| Platform | Hardware | Version |
|----------|----------|---------|
| Solaris | Ultra Sparc | Solaris 2.6 or higher |
| HP | HP 9000 series 700, 800, | HP-UX 11.00 or higher |
| IBM | IBM RS/6000 | AIX 4.3 or higher |
| Linux | PC i386 | Red Hat 6.0 |

Note that LoadRunner supports all X Servers.

# UNIX System Requirements

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 described in two chapters:

➤ Downloading LoadRunner from the installation media

➤ Setting the environment

At the end of each chapter you will find a troubleshooting section that provides solutions to problems you might encounter. Once you have completed installation, refer to the additional documentation for details on working with LoadRunner.

# System Resources

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

|  | Solaris | HP | IBM | Linux |
|---|---|---|---|---|
| **Disk space (MB)** |  |  |  |  |
| Required for program | 22 | 22 | 21 | 7 |
| **Swap Space** |  |  |  |  |
| Each Vuser host | 1 MB | 1 MB | 1 MB | 1 MB |
| Each Vuser (run as process) | 200KB | 200KB | 200KB | 200KB |
| **Free File descriptors** |  |  |  |  |
| Each Vuser host | 34 | 34 | 34 | 34 |
| Each Vuser (run as process) | 30 | 30 | 30 | 30 |
| **Free Process Entries** |  |  |  |  |
| Each Vuser host | 3 | 3 | 3 | 3 |
| Each Vuser (run as process) | 1 | 1 | 1 | 7 |

You can increase the number of file descriptors, process entries, and swap space by configuring the kernel. More information will follow.

For optimal operation, LoadRunner requires a ratio of main memory to swap space of approximately 1:7. Once you have calculated the necessary swap space, divide by 7 to determine the amount of main memory required for the Vuser.

# 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 700 Series

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 version 4.1 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 maxuprocs = number (e.g.500)
```

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


## Increasing File Descriptors

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

### Solaris

The following section describes the procedure to increase file descriptors on Solaris operating systems. In this example 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
```

**3** Alternatively, use the *adb* command to increase file descriptors (all shells). Note that 400 HEX is the equivalent to decimal 1024, the MAX limit in Solaris 2.3.

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

**4** To increase the maximum number of file processes, you must reconfigure the kernel. Login as root and set the *rlim_fd_max* parameter inside the /etc/system file. Save the file and reconfigure the system by typing touch /reconfigure. After reconfiguring the system, reboot the machine.

### HP-UX 700 Series

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.

# Increasing Swap Space

Each Vuser requires swap space ranging from 200KB 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 2.4.

**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 4.x 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 200MB 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 filesystem configuration file /etc/swapspaces. Type:

```
swapon -a
```

# 10

## Pre-Installation

To ensure a smooth installation of the UNIX components, it is recommended that you perform the following pre-installation steps.

Make sure that there is sufficient storage space, process entries, swap space, etc. in the disk partition where you intend to install LoadRunner. Refer to the System Requirements section.

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 through ftp or NFS at a later stage.

## 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. In your *.cshrc* file, you need to indicate the LoadRunner installation directories. If you are working with kshell or Bourne shell, you should set these variables in both your *.cshrc* and *.profile* files. At run-time, LoadRunner determines the platform upon which the Vuser is running, and sets the LoadRunner directory, M_LROOT, accordingly.

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

➤ For LoadRunner Sun: */tools/mercury/sun/lrunner*

➤ For LoadRunner IBM: */tools/mercury/ibm/lrunner*

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

## LoadRunner Settings in the .cshrc File

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

```
# Please insert the following at the begining of your .cshrc file
# LoadRunner settings #
#Chooses a path based on the location of the machine dependent LR installation

switch ("`uname`")
  case SunOS:
    switch ("`uname -r`")
      case 5.*:
      setenv M_LROOT {replace with LoadRunner Solaris installation path}
        breaksw
      case 4.*:
      setenv M_LROOT {replace with LoadRunner SunOs installation path}
      setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:${M_LROOT}/bin
        breaksw
    endsw
   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
```

## 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:

```
# Please insert the following at the begining of your .profile file

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

```
        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 #
```

# 11

## Installing LoadRunner on UNIX

LoadRunner is installed using the installation media provided with the LoadRunner distribution package. To install LoadRunner on your system, you must first access the installation program, *install.sh*, and then run the program.

If you are installing the LoadRunner UNIX components from a CD-ROM device on a UNIX machine, run the installation program, install.sh, directly from the CD-ROM. The install.sh file is located under the respective unix directory (e.g cddrive/sun or cddrive/solaris).

If a CD-ROM device on a UNIX machine is not available, copy the UNIX components to a PC drive and transfer the files through ftp or NFS mounting to a UNIX directory in which you have write permission. When using this method of installation (through a PC), you must change the permissions of the install.sh script. Type:

```
chmod +x install.sh
```

## Running the Installation Program

Before you begin the installation program, make sure you see 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 69.

**To begin the installation program:**

➤ If you are running from a CD-ROM drive on a Sun or HP platform, type:

```
<cdrom_dir>/install.sh
```

➤ If you are running from a CD-ROM drive on an IBM platform, type:

```
/usr/cddrive/platform/install.sh
```

➤ If you transferred the components to a UNIX directory from a PC, type the following from the working directory:

```
./install.sh
```

The installation program is invoked and the main menu appears.

1) Install LoadRunner 6.5
2) Display disk space requirements
3) To contact Mercury Interactive ...
Q) Quit

**To Install LoadRunner:**

**1** Select option 1. LoadRunner asks you to specify an installation directory.

**2** Specify an installation directory. If you specify a directory that does not exist, LoadRunner creates it. If you want the LoadRunner files to be downloaded to a directory other than the one displayed, enter the new path name. Otherwise, press Enter.

LoadRunner displays all of the available modules and the installation options:

GUI
DB

Please choose one of the following options:
1) Install all of the above components
2) Select the component(s) to install
3) Return to the Main Menu

**3** Select option 1 to install of the components or option 2 to install specific components. If you selected option 1 LoadRunner begins installing files. If you selected option 2, the installation program prompts you regarding each component before installing the files.

After installing the files, LoadRunner informs you that the installation is complete.

**4** Perform the steps listed at the end of the installation program:

1) Set the M_LROOT environment variable to <*installation directory*>.
2) Add $M_LROOT/bin to your DYNAMIC LIBRARY PATH environment variable.
3) Run verify_generator (if installing Vusers) from $M_LROOT/bin to verify
LoadRunner environment.

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 13, "Verifying Your Installation."

**5** Select Quit to exit the installation program.

## 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** Place 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 press 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 cdrfs 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.

# 12

# Post Installation

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

This chapter discusses:

➤ Setting Environment Variables

➤ Checking Authorizations

After you complete the post-installation configurations, run the LoadRunner verification utility to check your installation. For more information, see Chapter 13, "Verifying Your Installation."

## Setting Environment Variables

Before invoking LoadRunner, check that the environment variables are properly set in your *.cshrc* file (and *.profile* file for kshell or Bourne shell environments). Sample *.cshrc* and *.profile* files appears in Chapter 10, "Pre-Installation." You can use all or part of the sample files.

Note that the virtual users are non-interactive users. Therefore, you must ensure that the environment variables are defined in the non-interactive section of the *.cshrc* file. For instance, the definitions should not appear in the *if ($?prompt)* section. It is strongly recommended to place the definitions at the beginning of the *.cshrc* file.

Define the following environment variables in your *.cshrc* file. Note that if you are working with kshell or Bourne shell, you should set these variables in both your *.cshrc* and *.profile* files. The syntax in the examples below are for cshell users. Please refer to the *.profile* example in Chapter 10, "Pre-Installation" for kshell and Boune shell users.

➤ M_LROOT

➤ PATH

➤ LD_LIBRARY_PATH (Solaris, Linux), LIBPATH (AIX), SHLIB_PATH (HP-UX)

**M_LROOT**: Set M_LROOT to the *lrunner* 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 aut_name                    /* Sun and Linux platforms */
chatr aut_name                  /* HP platforms */
dump -H aut_name                /* 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*).

# 13

---

# Verifying Your Installation

LoadRunner has a setup verification utility *verify_generator*, that checks the LoadRunner setup. They check 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

You can check the Vuser hosts independently, by running *verify_generator*. The verify_generator utility is useful for environments where only Vusers are installed on UNIX.

The utility checks the following items in the Vuser environment:

➤ that there are at least 128 file descriptors

➤ the proper .rhost permissions: -rw-r--r--

➤ that the host be contacted using rsh to the host. If not, checks for the host name in .rhosts

➤ that M_LROOT  is not empty

➤ that .cshrc produces the correct M_LROOT

➤ that .cshrc exists in the home directory

➤ that the current user is the owner of the .cshrc

➤ that the executables mdrv, lr_bridge, lnchservice, mdrv.exe, lr_bridge.exe and lnchservice.exe exist in $M_LROOT/bin

➤ that the executables have executable permissions

➤ that PATH contains $M_LROOT/bin, and /usr/bin

➤ that rstatd daemon exists and is running

➤ the RPC (client and server) to make sure that they work

This section of verify_generator is repeated for each Virtual User host specified by the -host option.

## 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.

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