

HPE LoadRunner

Software Version: 12.55

Installation Guide

Go to **HELP CENTER ONLINE**

<http://lrhelp.saas.hpe.com>



Hewlett Packard
Enterprise

Document Release Date: July 2017 | Software Release Date: August 2017

Legal Notices

Warranty

The only warranties for Hewlett Packard Enterprise Development LP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HPE shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HPE required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notice

© Copyright 1993-2017 Hewlett Packard Enterprise Development LP

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

UNIX® is a registered trademark of The Open Group.

Contents

- HPE LoadRunner 1

- Welcome to LoadRunner 5
 - LoadRunner Help Center 5
 - Accessing PDF Files 5
 - Useful Links 5
 - LoadRunner Components 6
 - Help Improve VuGen 7

- Chapter 1: System Requirements 8
 - LoadRunner System Requirements 8
 - Prerequisite Software for installation on Windows 8
 - Automatically detected and installed by LoadRunner installer 8
 - Manual installation for Windows updates 9
 - Installation Notes and Limitations 9

- Chapter 2: Installing LoadRunner on Windows 11
 - Installation Workflow 11
 - Upgrade to LoadRunner 12.55 12
 - Upgrading from LoadRunner 11.00 or later: 13
 - Upgrading from a LoadRunner version earlier than 11.00: 13
 - Install LoadRunner on Windows 13
 - Install LoadRunner Silently 17
 - Installation Command Line Options 18
 - Configure User Login Settings 20
 - Install a LoadRunner Language Pack 21

- Chapter 3: Installing the Load Generator on Linux 22
 - Installation Workflow 22
 - Install a Load Generator on Linux with the Setup Wizard 24
 - Silent Load Generator Installations on Linux 25
 - Configure the Linux Environment 26
 - Set the Environment Variables 27
 - Verify the Linux Installation 28
 - Run verify_generator 28
 - Check the Controller Connection 29
 - Install a Load Generator Using Docker 30
 - Improve Load Generator Performance 32
 - Increase File Descriptors 33

Increase Process Entries	34
Increase Swap Space	34
Uninstall the Load Generator from a Linux Machine	34
Troubleshoot the Load Generator Linux Installation	35
Chapter 4: Managing Licenses	40
Install New Licenses	40
View License Information	41
Troubleshoot Licenses	44
Send Us Feedback	45

Welcome to LoadRunner

Welcome to the LoadRunner Installation Guide.

LoadRunner, a tool for performance testing, stresses your application to isolate and identify potential client, network, and server bottlenecks.

This guide describes how to install and set up LoadRunner.

LoadRunner Help Center

For context sensitive help within the LoadRunner products, click F1 within a dialog box or use the Help menu.

You can access the LoadRunner Help Center on the Web (<http://lrhelp.saas.hpe.com/en/12.55>), or use the locally installed Help Center. To switch between online and local modes, select **Help > Help Center Options > Open Online** or **Open Locally**.

Note:

- To view the Help Center in Internet Explorer or within VuGen, you need to enable JavaScript (Active scripting) in your browser settings (**Tools > Options > Security > Internet > Custom Level**).
- If the online Help Center is unavailable at the start of a LoadRunner application session, the **Open Online** option may be disabled during the whole session with that application.

Accessing PDF Files

To access LoadRunner Help in PDF format:

- In Windows operating systems prior to Windows 8: After installing LoadRunner, click **Start > All Programs > HPE Software > HPE LoadRunner > Documentation** and select the relevant document.
- In icon-based desktops such as Windows 8, search for **Guide** and select the appropriate user guide.

Useful Links

The following online resources provide more information for LoadRunner users:

Resource	URL
LoadRunner Help Center	LoadRunner Help Center (select the relevant version)
HPE Software Web site	http://www.hpe.com/go/software
HPE Software Support	https://softwaresupport.hpe.com

Resource	URL
Knowledge Base and Manuals Library	https://softwaresupport.hpe.com/group/softwaresupport/
LoadRunner Community Forums	http://www.hpe.com/forum/lrpc
Blog	http://www.hpe.com/blog/loadrunner
LoadRunner Resources site	https://saas.hpe.com/en-us/resources/loadrunner
LoadRunner Integrations and Solutions	https://softwaresupport.hpe.com/group/softwaresupport/search-result/-/facetsearch/document/KM01702710
LoadRunner on Twitter	https://twitter.com/HPE_Loadrunner
LoadRunner on LinkedIn	https://www.linkedin.com/groups/1879289
LoadRunner on Facebook	https://www.facebook.com/groups/HPLoadRunner/

LoadRunner Components

The LoadRunner **full** installation includes the following components:

- **Virtual User Generator (VuGen).** LoadRunner's tool for creating virtual user (Vuser) scripts, primarily through recording. Vuser scripts emulate users without a graphical user interface by using direct function calls.
- **Controller.** Controls the execution of scenarios and Vusers. Includes the online monitors which monitor and display information about the test execution. The Controller must be installed on the computer used to control the Vusers.
- **Analysis.** Graphs and reports for analyzing the load test.
- **Load Generator.** Component for running Vusers (including Windows-based GUI Vusers) to generate load.
- **MI Listener Component.** Component for the MI Listener machine used in running Vusers and monitoring over the firewall. For more information, refer to the "Working with Firewalls in LoadRunner" in the [LoadRunner Help Center](#) (select the relevant version).
- **Monitors over Firewall.** Component on the agent machine for monitoring over the firewall. For more information, refer to "Working with Firewalls in LoadRunner" in the [LoadRunner Help Center](#) (select the relevant version).
- **TruClient.** Component for recording and developing test scripts for Web-based applications. For more information, see the [TruClient Help Center](#) (select the relevant version).

All of the standalone installations (for example, for VuGen or the load generator) can be found in the DVD's **Standalone Applications** folder.

All of the additional components (such as the Citrix Agent and so forth) can be found on the DVD's **Additional Components** folder.

Help Improve VuGen

You can help us improve the quality, reliability, and performance of VuGen by participating in the VuGen improvement program. When you join the program, VuGen collects anonymous information about your software and hardware configuration, and about how you use VuGen.

VuGen does not collect any personally identifiable information, or any information about your company environment or the code of your scripts.

You can join the program by selecting the **Participate in VuGen improvement program** check box included in the initial LoadRunner or VuGen Setup window, displayed at the beginning of installation.

You can also join or leave the improvement program from within VuGen. Select **Tools > Options > General > Usage Data Collector**.

Chapter 1: System Requirements

This chapter includes:

- [LoadRunner System Requirements](#) 8
- [Prerequisite Software for installation on Windows](#) 8
 - [Automatically detected and installed by LoadRunner installer](#) 8
 - [Manual installation for Windows updates](#) 9
- [Installation Notes and Limitations](#) 9

LoadRunner System Requirements

The system requirements necessary for running LoadRunner on a Windows system, or for running a load generator on a Windows or Linux system, are listed in the [System Requirements](#).

System requirements for other related components:

- **HPE Diagnostics:** For system requirements, see HPE Diagnostics System Requirements at <https://softwaresupport.hpe.com/km/KM02816022>.
- **HPE Network Virtualization:** For system requirements and installation instructions, see the [Network Virtualization for LoadRunner and Performance Center Help](#) (select the relevant version) or the NV installation guide in the <LoadRunner installation DVD>\Additional Components\HPE NV folder. You can install Network Virtualization during the LoadRunner installation, or at a later time.

Prerequisite Software for installation on Windows

Before installing LoadRunner, make sure the prerequisite software is installed on the LoadRunner machine. Some of the prerequisite software is detected manually by the installer; other prerequisite software must be installed manually.

- ["Automatically detected and installed by LoadRunner installer" below](#)
- ["Manual installation for Windows updates" on the next page](#)

Automatically detected and installed by LoadRunner installer

When you run the LoadRunner installation wizard, the wizard detects which prerequisite software is already installed on the machine and which software is missing. When you continue with the installation, all missing prerequisite software is installed.

The following prerequisite software must be installed:

- Microsoft Windows Installer 3.1
- Windows Imaging Component. This is a prerequisite for .NET Framework 4.0
- .NET Framework 4.6.2
- Microsoft Core XML Services (MSXML) 6.0

- Microsoft Visual C++ 2010 Redistributable Package - x86 only
- Microsoft Visual C++ 2012 Redistributable Package - x86 and x64
- Microsoft Visual C++ 2013 Redistributable Package - x86 and x64
- Microsoft Visual C++ 2015 Redistributable Package - x86 and x64
- Microsoft Data Access Components (MDAC) 2.8 SP1 (or later)

Manual installation for Windows updates

Before installing any of the LoadRunner components, make sure that the full set of Windows updates has been installed. If not, you must install them manually.

Note: Before installing any of the Windows updates, disable UAC (User Account Control) and restart the computer. For details on how to disable UAC, see the [Microsoft Windows documentation](#).

You can find the list of Windows updates in the [System Requirements](#).

Installation Notes and Limitations

Note: See the LoadRunner Readme for additional notes and limitations.

Permission requirements:

The Installation process, for all components, requires a full administrator account (root account for Linux systems) for all operating systems.

After installation, all of the LoadRunner applications and components can run under a standard user account (an administrator account is not required), with UAC and DEP enabled.

Coloring output messages:

VuGen uses SQL CE for coloring output messages, which requires Microsoft.VC90.CRT (9.0.30729) to be installed on the machine.

This can be found in Microsoft Visual C++ 2008 Service Pack 1 Redistributable Package.

To use this functionality, [Microsoft Visual C++ 2008 Service Pack 1 Redistributable Package MFC Security Update](#) must be manually installed on the LoadRunner machine before installing LoadRunner.

Running Web Services Vusers on Windows

If you are installing a standalone load generator on a Windows 8.1 or Windows 2012 (R2) machine, and you intend to run Web Services Vusers, .NET 3.5 must be turned on, and WSE 2.0 SP3 and WSE 3.0

must be installed.

1. Turn on .NET 3.5 Windows. (See [MSDN](#) for details.)
2. Install the WSE components from the LoadRunner DVD folders—**lrunner\Common\wse20sp3** and **lrunner\Common\wse30**—or download these components from the Internet:

WSE 2.0 SP3: <https://www.microsoft.com/en-us/download/details.aspx?id=23689>

WSE 3.0: <https://www.microsoft.com/en-us/download/details.aspx?id=14089>

LoadRunner and UFT coexistence

If you install LoadRunner and UFT on the same machine, and then uninstall one of them, the remaining software program may not function correctly.

Resolution: Run a Repair of the software program you want to use on the machine.

Virtual environments:

The architectures provided by virtualization vendors are rapidly evolving. LoadRunner is expected to function as designed in these changing environments, as long as the third-party vendor guarantees full compatibility of the virtualized environment with the LoadRunner-approved hardware requirements. If you follow LoadRunner system requirements and support matrix to create the virtual machine, LoadRunner will work correctly.

Working on top of a virtual machine may require access to the virtualization server hardware/monitoring environment, to ensure the virtualization server is not saturated; otherwise, this might obscure the virtual machine's measurements and lead to false results.

Chapter 2: Installing LoadRunner on Windows

This chapter describes how to install either the full version of LoadRunner or a LoadRunner component, on a Windows platform.

This chapter includes:

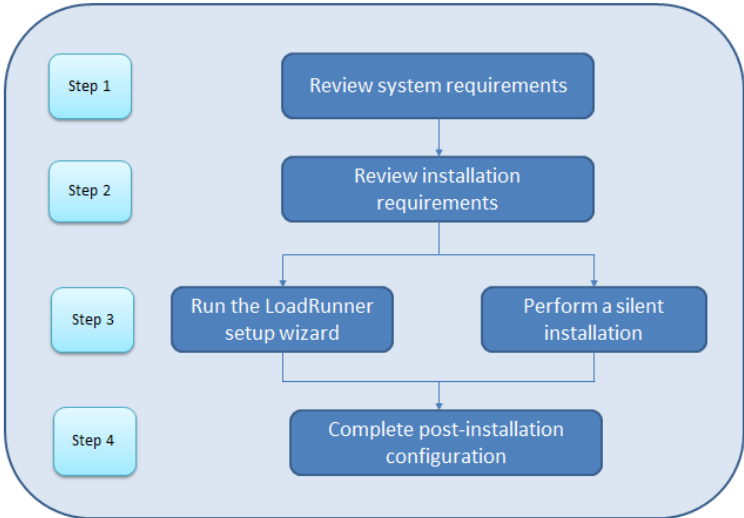
- [Installation Workflow](#) 11
- [Upgrade to LoadRunner 12.55](#) 12
 - [Upgrading from LoadRunner 11.00 or later:](#) 13
 - [Upgrading from a LoadRunner version earlier than 11.00:](#) 13
- [Install LoadRunner on Windows](#) 13
- [Install LoadRunner Silently](#) 17
- [Installation Command Line Options](#) 18
- [Configure User Login Settings](#) 20
- [Install a LoadRunner Language Pack](#) 21

Installation Workflow

Your LoadRunner installation DVD includes a setup wizard that guides you through the process of installing the LoadRunner components.

The final stage of the installation includes the optional installation of HPE Network Virtualization. Installing Network Virtualization enables you to generate the NV Insights report (replaces the NV Analytics report) from LoadRunner. The NV Insights report provides an in-depth analysis of how your application performs with different loads over various types of networks (virtual locations) and includes suggestions for optimizing your application's performance.

Installing LoadRunner on a Windows system involves the steps shown below:



1. Review system requirements

Before you install LoadRunner, make sure that your system meets the hardware and software requirements. For details, see ["LoadRunner System Requirements" on page 8](#).

Prerequisite software: When you run the LoadRunner installation wizard, the wizard detects which prerequisite software is already installed on the machine and which software is missing. When you continue with the installation, all missing prerequisite software is installed. For details, see ["Prerequisite Software for installation on Windows" on page 8](#).

2. Review installation requirements

Before you begin the installation, make sure you meet the following installation requirements:

- You must have full local administrative rights on the designated machine.
- Installation must be performed at the destination machine. LoadRunner does not support installation via terminal service.
- For the full list of components that can be installed on the same physical machine at the same time, see the [System Requirements](#).

Note: It is recommended that you close all anti-virus applications, such as McAfee or Aladdin's eSafe, before installing LoadRunner.

3. Perform the installation

- a. If you were working with a previous version of LoadRunner, review the upgrade instructions. For details, see ["Upgrade to LoadRunner 12.55" below](#).
- b. Run the setup wizard to install the full version of LoadRunner, LoadRunner standalone components, or additional components on a Windows system. For details, see ["Install LoadRunner on Windows" on the next page](#).
To perform a silent installation, see ["Install LoadRunner Silently" on page 17](#).
- c. After you complete the LoadRunner installation, you can install a localized version to view the LoadRunner, VuGen Standalone, and Analysis Standalone user interface in your local language. For details, see ["Install a LoadRunner Language Pack" on page 21](#).

4. Complete post-installation configuration

- Configure LoadRunner to run Vusers on a load generator machine, without the need to log on manually. For details, see ["Configure User Login Settings" on page 20](#).
- Manage LoadRunner licenses. For details, see ["Managing Licenses" on page 40](#).

Upgrade to LoadRunner 12.55

The upgrade process varies depending on your installed version of LoadRunner.

Upgrading from LoadRunner 11.00 or later:

Install LoadRunner 12.55 as described in "[Install LoadRunner on Windows](#)" below. The installation process detects the older version, and gives you the option to upgrade or exit the installation.

Note: If you used custom certificates in your previous installation of LoadRunner, install them again when prompted for certificates during setup. Otherwise, the setup program will overwrite them using the defaults.

Upgrading from a LoadRunner version earlier than 11.00:

1. Uninstall LoadRunner.

To uninstall LoadRunner, use the Windows Add/Remove Programs utility. Alternatively, you can run the **setup.exe** file located in the root directory of the LoadRunner installation DVD, select **LoadRunner Full Setup**, and then select the **Remove** option in the setup wizard.

2. Install LoadRunner 12.55.

For details, see "[Install LoadRunner on Windows](#)" below.

Install LoadRunner on Windows

This section describes how to install LoadRunner on Windows using the setup wizard.

For details on how to perform a silent installation, see "[Install LoadRunner Silently](#)" on page 17.

To install LoadRunner or an additional component:

1. Before installing:
 - Review the pre-installation information, including the system requirements and prerequisite software, described in "[System Requirements](#)" on page 8.
 - If you plan to install Network Virtualization, make sure that your system meets the requirements, as described in the [Network Virtualization for LoadRunner and Performance Center Help](#) (select the relevant version), or the NV installation guide in the **<LoadRunner installation DVD>\Additional Components\HPE NV** folder. (You can install Network Virtualization during the LoadRunner installation, or at a later time.)

Note: If you install Network Virtualization as part of the LoadRunner Windows installation, you may need to restart the machine after setup.

- Make sure you have full, local administrative rights on the designated machine.
 - Make sure the Windows Update process is not running.
2. Perform the following on the installation machine:

- Uninstall any previous Shunra version.
- Disable UAC (User Account Control) - for details, refer to your Microsoft Windows documentation.

Then reboot the machine. (Installation may fail if this is not done.)

3. To prevent DEP (Data Execution Prevention) from interfering with the installation, enable it for essential Windows programs and services only.

For details on how to change DEP settings, refer to your Microsoft Windows documentation.

4. Run the **setup.exe** file in the root folder of the installation DVD.

The LoadRunner installation program begins and displays the installation options.

5. Select the required installation option.

From the installation menu page, select one of the following installation options:

- **LoadRunner Full Setup.** Installs the main LoadRunner components, including Controller, Virtual User Generator (VuGen), Analysis, Load Generator, and TruClient. Use this option for the machine that runs the load testing scenarios.

Note: The HPE LoadRunner Setup wizard can install either LoadRunner or Performance Center. Make sure to select **LoadRunner**.

For details on the components that are included in the full installation, see "[LoadRunner Components](#)" on page 6.

- **VuGen.** Installs a standalone version of VuGen (includes TruClient).
- **Analysis.** Installs a standalone version of LoadRunner Analysis.
- **Load Generator.** Installs the components needed for running Vusers to generate load. Use this option for machines that are used to generate load only, 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 "Working with Firewalls in LoadRunner" chapter in the *HPE LoadRunner User 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 "Working with Firewalls in LoadRunner" chapter in the *HPE LoadRunner User Guide*.
- **TruClient.** Installs the standalone TruClient application for recording and developing test scripts for Web-based applications.

Note: If you install the TruClient standalone on a machine, you cannot install any of the other LoadRunner components, except for the standalone Analysis.

To use TruClient on a LoadRunner machine, install the LoadRunner full setup, which includes the TruClient component.

- **Language Packs.** This option is available only when installing on native non-English operating

systems. Enables you to install a patch for localized LoadRunner user interface, on top of the English version. For details, see ["Install a LoadRunner Language Pack" on page 21](#).

- **Additional Components.** Opens the Additional Components folder located in the root folder of the installation DVD. For details of the additional components that you can install, see the **Advanced Topics > Additional Components** section in the [LoadRunner Help Center](#) (select the relevant version) .
6. Specific software, for example, Microsoft Visual C++, needs to be installed before you can install LoadRunner. If the prerequisite software is not already installed on your computer, a dialog box opens displaying the list of prerequisite programs that are required.

Click **OK** to install the listed software before continuing with the LoadRunner installation. If you click **Cancel**, the LoadRunner setup wizard exits because LoadRunner cannot be installed without the prerequisite software.

Note: For the full list of prerequisite software, see ["Prerequisite Software for installation on Windows" on page 8](#).

7. Perform the installation.

The LoadRunner Setup Wizard opens, displaying the Welcome page.

Follow the instructions in the wizard to complete the installation. While installing, consider the following:

- The installation path for LoadRunner or LoadRunner components cannot contain non-English characters.
- During installation, you can select the **Start LoadRunner Agent after installation** option, which starts the LoadRunner Agent on the load generator immediately after installation. The Agent enables communication between the load generator and the Controller. For more details on the LoadRunner Agent, see the *HPE LoadRunner User Guide*.
- During the installation of **Load Generator** standalone, **MI Listener**, or **Monitors over Firewall** components, the setup wizard prompts you to select whether you want the installed agent to run in LoadRunner mode or Performance Center mode. The differences are as follows:

Performance Center mode	LoadRunner mode
The agent runs as a service under a special account named IUSR_METRO . This is a local Windows account, created during the installation process in Performance Center mode. (Some additional Performance Center configuration is also added on the Load Generator standalone machine.)	The agent runs as a regular process.
As a service, the agent is launched automatically when the operating system starts.	You must log in to the computer before the process can start.

- If you are installing Load Generator standalone for use with Business Process Monitoring (BPM), select LoadRunner mode unless you have a specific requirement to run the agent as a service.
- In LoadRunner/BPM mode you can delete the IUSR_METRO account using the Windows **Local Users and Groups** console. Deleting IUSR_METRO in LoadRunner/BPM mode will not affect functionality.
- In Performance Center mode, you can delete the IUSR_METRO account only if the Performance Center system user was configured to a different Windows account; otherwise the host will not function correctly.
- During installation of LoadRunner **Full Setup, Load Generator, Monitor over Firewall**, and **MI Listener**, you can optionally install CA and SSL certificates for LoadRunner by selecting the **Specify a certificate that will be used by the LoadRunner Agent** option. These certificates are used for authentication and secure communication respectively. Both certificates should be in *.cer (X.509) format.
 - For a CA certificate: You can enter the path to an existing certificate, or leave blank to skip the step. If you want to install the CA certificate, it should be generated in advance.
 - For an SSL certificate: You can select it from an existing certificate file. Alternatively, it can be generated automatically if you provide the CA certificate containing the private key.

For details on generating a CA certificate, see “How to Create and Use Digital Certificates” in the *HPE LoadRunner User Guide*.

For more information on working with certificates in LoadRunner, see the "Authentication Settings" documentation in the *HPE LoadRunner User Guide*.

8. After the installation is complete, you can choose to install HPE Network Virtualization (NV).

In the setup wizard, select

- **Typical mode** for an automatic installation.
- **Custom mode** to change the installation folder, data folder, and the port.

For more details, see the installation section of the [Network Virtualization for LoadRunner and Performance Center Help](#) (select the relevant version) or the NV installation guide in the **<LoadRunner installation DVD>\Additional Components\HPE NV** folder.

Note:

- To repair the installation, run the setup.exe file located in the root directory of the LoadRunner installation DVD, select **LoadRunner Full Setup**, and then select the **Repair** option in the setup wizard.
- You can configure LoadRunner to run Vusers on a load generator machine without the need for the user to manually log in to the machine. For more information, see ["Configure User Login Settings" on page 20](#).
- For a list of the components that were registered during setup, such as **DLL** and **OCX** files, see the **RegisteredComponents_HP LoadRunner.txt** file in the **build_info** folder of the installation.

Install LoadRunner Silently

A *silent installation* is an installation that is performed without the need for user interaction. You use the command line to run the setup files. For details, see ["Installation Command Line Options" on the next page](#).

Note: Before you install LoadRunner, review the pre-installation information, including the system requirements and prerequisite software, described in ["System Requirements" on page 8](#).

To perform a silent installation of LoadRunner, run one of the following commands from the command line:

- To install all of the LoadRunner components including the prerequisite software in a single command:

```
<Installation_disk>\lrunner\<your_language_folder>\setup.exe /s
```

- To first install all of the prerequisites, and then LoadRunner, run the following commands:

```
<Installation_disk>\lrunner\<language_folder>\setup.exe /InstallOnlyPrerequisite /s
```

```
msiexec.exe /qn /i "<Installation_disk>\lrunner\MSI\LoadRunner_x64.msi"
```

- By default, HPE Network Virtualization (NV) is installed during the LoadRunner installation. To facilitate this installation add the following to the installation command:

```
REBOOT_IF_NEEDED=1
```

- To prevent the installation program from installing NV, add the following to the installation command:

```
INSTALL_NV=0
```

- To install a LoadRunner standalone application:

```
<Installation_disk>\Standalone Applications\Setup<component_name>.exe /s /a /s
```

- To install a LoadRunner additional component:

```
<Installation_disk>\Additional Components\<setup_file_path> /s /a /s
```

Note:

- All machines on which you install LoadRunner require administrator privileges.
- Use standard MSI command line options to define installation properties. For example, use `INSTALLDIR` to specify an alternate installation folder.
- To prevent the LoadRunner Agent on the load generator from starting immediately after installation, add the following to the command line command: `START_LGA=0`. The Agent enables communication between the load generator and Controller. For more details on the LoadRunner Agent, see the [LoadRunner Help Center](#) (select the relevant version).

Installation Command Line Options

You can use the Windows command line to install the full LoadRunner package, standalone applications, and Additional Components using the Wrapper file (`Setup.exe`) and "Package for the Web" files (`<PFTW>.exe`).

- The full LoadRunner installation can be launched using the `Setup.exe` file.
- The installations of standalone applications and additional components can be launched via PFTW files.

Installing the full LoadRunner package from the Wrapper file

You can install the full LoadRunner package from the installation wrapper file, **Setup.exe**, located in `<Installation_DVD>\lrunner\<your_language>` folder. The following command line options are available:

Option	Description
<code>/s</code>	Runs the installation in the background (silently), with no user interaction.
<code>/qb</code>	Runs the installation in unattended mode, with limited user interaction.
<code>/InstallOnlyPrerequisite</code>	Installs only the prerequisites – does not install any LoadRunner components. By default, the setup program checks that your machine has the required prerequisites, and installs them if necessary, before installing the LoadRunner components.

You can set public properties for the command line installation, using the following syntax:

```
setup.exe PROPERTY_NAME="value"
```

The following properties are available:

Property name	Description
INSTALLDIR=" <i>your_path</i> "	Specifies the location where the application will be installed.
REBOOT_IF_ NEEDED	1: Reboots the machine after installation, if required. This is recommended if you include the installation of NV (Network Virtualization). 0: Does not reboot the machine after installation. Default: 0
INSTALL_NV	Empty string: Excludes the installation of the NV (Network Virtualization) component. 1: Includes the installation of the NV (Network Virtualization) component. Default: 1
INSTALL_NV_ MODE	1: Sets the NV installation mode to Typical . 2: Sets the NV installation mode to Custom . Default: Typical
INSTALL_ DIR=" <i>your_ path</i> "	Specifies a path for the installation.
START_LGA	Empty string: Instructs the machine not to start the Load Generator after installation. 1: Instructs the machine to start the Load Generator after installation. Default: 1
IS_RUNAS_ SERVICE	0: Runs the Load Generator's agent as a process. 1: Runs the Load Generator's agent as a service. Default: 1

Example: The following command performs the installation silently and then reboots the machine if necessary:

```
DVD\lrunner\en\setup.exe /s REBOOT_IF_NEEDED="1"
```

Installing a Standalone Application or an Additional Component from a PFTW file

You can install a LoadRunner standalone application or one of the additional components, via the PFTW (Package for the Web) files that are included with the LoadRunner installation media. The installation files are located under the **Standalone Applications** or **Additional Components** folders on the installation media. You can double-click on the packaged file or run it from the command line, using the following options:

Option	Description
/s	Runs the installation in the background (silently), with no user interaction.
/e	Only extracts the installation files; does not run them.
/f	Specifies the path of a temporary folder for file extraction. For example: /f "c:\my_temp_folder" If you leave out this option, the default temporary folder is used.
/a	Allows you to pass parameters or properties to the autorun file, such as setup.exe. Use the properties defined above for the Setup.exe file.

Example: The following command silently runs a Load Generator () setup, installs the application in a specified folder, and then starts the Load Generator agent after the installation:

```
SetupLoadGenerator.exe /s /a INSTALLDIR="c:\HPE\LGSA" START_LGA="1"
```

Configure User Login Settings

By default, you need to manually log on to a computer before LoadRunner can run Vusers on that computer. However, you can configure LoadRunner to run Vusers on a load generator machine without the need to manually log on to the machine.

To configure user login settings:

1. Do one of the following:
 - Select **Start > All Programs > HPE Software > HPE LoadRunner > Tools > Agent Runtime Settings Configuration**.Or
 - In icon-based desktops such as Windows 8, search for **Agent** and select the **Agent Runtime Settings Configuration** item.The LoadRunner Agent Runtime Settings dialog box opens.
2. Select one of the following options:

- **Allow virtual users to run on this machine without user login.** LoadRunner automatically logs on to the network from the load generator machine, so the Vusers can run without any manual intervention. Enter the network domain where the user machine resides, a user name, and password.

Note: When created, the LoadRunner Agent service starts with the **LocalSystem** account (not as a specified user). The specified credentials are used by the Agent service to start the *mdrv.exe* process when you run the script.

- **Manual log in to this machine.** The user must manually log on to the network from the load generator machine for each session of running Vusers.
3. Click **OK**.

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

Install a LoadRunner Language Pack

The LoadRunner language packs enable you to view the LoadRunner user interface in your local language. You install the language packs from the LoadRunner installation DVD, for the relevant LoadRunner component: LoadRunner full, VuGen standalone, or Analysis standalone.

For a list of supported languages, see the [System Requirements](#).

The language packs are supported for native non-English operating systems only.

Important: The native language of the operating system must be the same as the language pack you are installing. For example, the Spanish language pack must be installed on a machine with a native Spanish operating system.

To install a language pack:

1. Make sure that LoadRunner English is already installed.
2. In the root folder of the LoadRunner installation DVD, run **setup.exe**. The LoadRunner installation program begins and displays the installation options.
3. Click **Language Packs**. The Language Packs folder on the installation DVD opens.
4. Navigate to the folder for the language and component you want to install and run the installation file. For example, to install the French language pack on a Vugen standalone machine, the path is **<DVD root>\Language Packs\French\VugenSA\Vugen_FRA.msp**. Follow the on-line instructions.

Chapter 3: Installing the Load Generator on Linux

LoadRunner uses load generators to run Vusers. There are two versions of the LoadRunner Load Generator. One version runs Vusers on Windows platforms, and the other version runs Vusers on Linux platforms. You use a Windows-based Controller to control both the Windows-based and the Linux-based Vusers.

This chapter describes how to install the Load Generator on a Linux platform. For details on how to install the Load Generator on a Windows platform, see ["Installing LoadRunner on Windows" on page 11](#).

Note: For troubleshooting information, see ["Troubleshoot the Load Generator Linux Installation" on page 35](#).

This chapter includes:

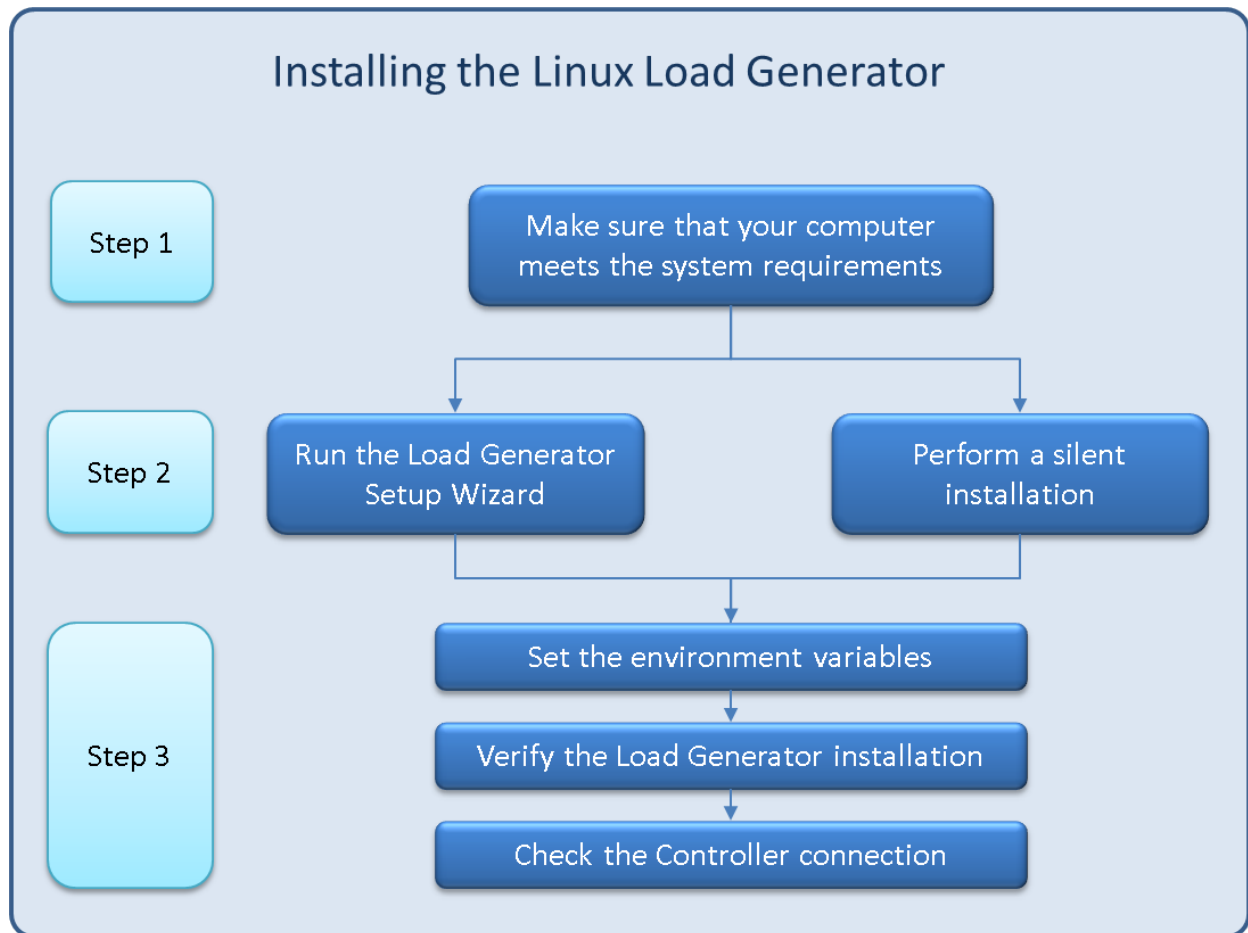
- [Installation Workflow](#) 22
- [Install a Load Generator on Linux with the Setup Wizard](#) 24
- [Silent Load Generator Installations on Linux](#) 25
- [Configure the Linux Environment](#) 26
 - [Set the Environment Variables](#) 27
 - [Verify the Linux Installation](#) 28
 - [Check the Controller Connection](#) 29
- [Install a Load Generator Using Docker](#) 30
- [Improve Load Generator Performance](#) 32
 - [Increase File Descriptors](#) 33
 - [Increase Process Entries](#) 34
 - [Increase Swap Space](#) 34
- [Uninstall the Load Generator from a Linux Machine](#) 34
- [Troubleshoot the Load Generator Linux Installation](#) 35

Installation Workflow

You can install the LoadRunner load generator component on a Linux platform to run Vusers. The Linux-based Vusers interact with the LoadRunner Controller, installed on a Windows platform.

You can install the load generator on a Linux machine using the installer (UI based or silent) or through a Docker container.

The following diagram shows the primary steps in installing the load generator on a Linux platform using the standard installation program:



1. Review the system requirements

Before you install the load generator on a Linux platform, make sure that your system meets the requirements, as described in "[System Requirements](#)" on page 8.

If you plan to install Network Virtualization, make sure that your system meets the requirements, as described in the [Network Virtualization for LoadRunner and Performance Center Help](#) (select the relevant version), or the NV installation guide in the **<LoadRunner installation DVD>\Additional Components\HPE NV** folder.

Note: To replay ODBC Protocol scripts on Linux machines, unixODBC v.2.3.1 or higher is required.

2. Run the setup

Note: It is recommended that you close all anti-virus applications, such as McAfee or Aladdin's eSafe, before installing LoadRunner.

- **Wizard installation:** Start the setup using the HPE Load Generator Setup Wizard. For more information, see "[Install a Load Generator on Linux with the Setup Wizard](#)" on the next page. If

you were working with a previous version of the load generator, the setup will first uninstall the old version and then install the new version.

- **Silent installation:** To perform a silent installation, see ["Silent Load Generator Installations on Linux" on the next page.](#)

3. Configure your environment

After the installation, before you can begin working with the load generator you need to configure your environment. This involves setting the appropriate environment variables, checking access to the load generator, and verifying the installation. See ["Configure the Linux Environment" on page 26.](#)

Install a Load Generator on Linux with the Setup Wizard

This section describes how to install the load generator on a Linux platform using the standard installation programs. For details on installing through a Docker container, see ["Install a Load Generator Using Docker" on page 30.](#)

The following section describes installing the load generator using the setup wizard. For information on how to perform a silent installation, see ["Silent Load Generator Installations on Linux" on the next page.](#)

Note: During installation, you can optionally install CA and SSL certificates for the load generator. These certificates are used for authentication and secure communication respectively. Both certificates should be in *.cer (X.509) format.

- For a CA certificate: You can enter the path to an existing certificate, or leave the path blank to skip the step. If you want to install the CA certificate, it should be generated in advance.
- For an SSL certificate: You can select it from an existing certificate file. Alternatively, it can be generated automatically if you provide the CA certificate containing the private key.

For details on generating a CA certificate, see "How to Create and Use Digital Certificates" in the *HPE LoadRunner User Guide*.

For more information on working with certificates in LoadRunner, see the "Authentication Settings" documentation in the *HPE LoadRunner User Guide*.

To run the Load Generator Setup Wizard:

1. Kill any LoadRunner agent process that may be running on the machine. Type:

```
cd /opt/HP/HP_LoadGenerator/bin; ./m_daemon_setup -kill;su -;
```
2. Change to super user.
3. If you have an earlier version of the load generator installed on the machine, you must first uninstall it. Type:

```
cd /opt/HP/HP_LoadGenerator/;cd _HP_LoadGenerator_Installation/;sh ./Change_HP_LoadGenerator_Installation;
```

4. Change directory to /<installation root directory>/InstData/Linux/VM. The <installation root directory> is any path that contains the **Web_Installers** folder, for example **/tmp/Web_Installers**. Copy the installation folder to this location.

Note: The Load Generator Setup Wizard checks that the required prerequisite software is installed on the computer. If any prerequisite software is missing, a message is displayed, and the setup wizard will abort. Install the required package and then re-run the setup wizard.

5. Launch the setup wizard:

For:	Type:
[sh and bash shells]	source ./installer.sh
[csh and tcsh shells]	source ./installer.csh
If the source command is not supported by the current shell, use the "dot" command.	For example: . ./installer.csh

Note: It is recommended that you use the **source** command to run the setup wizard, as shown above. If you run the setup wizard without using this command, you must manually set the environment variables for the current shell session. For details, see ["Set the Environment Variables" on page 27](#).

6. Follow the online instructions to install the load generator. For more help during installation, see ["Troubleshoot the Load Generator Linux Installation" on page 35](#).
7. Exit super user or switch to another user.
8. Configure your environment as described in ["Configure the Linux Environment" on the next page](#).

Silent Load Generator Installations on Linux

To perform a silent installation of the load generator, make sure you have super user privileges and follow the procedure below:

1. Change the current directory to the installer directory:

```
cd <path_to_installer_cd>/InstData/Linux/VM
```

2. Run the following command to silent-install the load generator:

```
source ./installer.sh -i silent
```

Note: It is recommended that you use a **source** command to perform a silent installation, as shown above. If you perform the installation without using the **source** command, you will need to set up the environmental variables after installing the load generator. For details, see ["Set the Environment Variables" on the next page](#).

If the source command is not supported by the current shell, use the "dot" command. For example, `. ./installer.sh - i silent`.

If you encounter an error during the installation, see ["Troubleshoot the Load Generator Linux Installation" on page 35](#).

By default, the load generator will be launched at the end of the installation. If you do not want to automatically launch the load generator, add the following command-line option:

```
source ./installer.sh -i silent -DSTART_PRODUCT_AFTER_INSTALL=No
```

Configure the Linux Environment

This section describes the configuration steps you need to complete after installing the load generator, before you can begin working with the load generator.

To complete the setup process after installing the load generator:

1. Set the appropriate environment variables.

See ["Set the Environment Variables" on the next page](#).

Note: If you used a **source** command to install the load generator, the setup wizard automatically sets the appropriate environment variables, and there is no need to perform this step.

2. Verify the load generator installation.
See ["Verify the Linux Installation" on page 28](#).
3. Start the load generator.

```
.cd /opt/HP/HP_LoadGenerator/;source env.csh;cd bin;./m_daemon_setup -install
```

4. Check that the Controller is able to access the load generator.
For details, see ["Check the Controller Connection" on page 29](#).

Set the Environment Variables

Note: This topic is applicable only if you ran the Load Generator Setup Wizard without using a **source** (or "dot") command. If you used these commands, there is no need to perform any of the procedures described below.

To enable the load generator to run, the following environment variables must be defined:

- **M_LROOT.** The location of the Linux load generator installation directory.
- **PATH.** The location of the Linux load generator **bin** directory.
- **PRODUCT_DIR.** The location of the Linux load generator installation directory.

The Load Generator Setup Wizard performs the following tasks relating to the environment variables:

- Adds the environment variable definitions to the system-wide startup scripts.
If the variable definitions were not correctly set during the setup, see "[Troubleshoot the Load Generator Linux Installation](#)" on page 35 for possible solutions.
- Sets environment variables for the current shell session if the **source** command was used to run the setup wizard.

This topic describes how to set the environment variables for the current shell session if a **source** command was not used to run the setup wizard.

To determine if environment variables are set, run **verify_generator** (see "[Run verify_generator](#)" on the next page) or use the following command:

```
echo $M_LROOT
```

If the name of the load generator installation folder is returned, then the environment variables are correctly set for current shell. If the name of the load generator installation folder is not returned, then manually set the variables as described below.

To manually set the environment variables for the current shell session (if the **source** command was not used to run the setup wizard), execute one of the following commands:

- Bash users:

```
source <load generator installation directory>/env.sh
```

- C Shell users:

```
source <load generator installation directory>/env.csh
```

Verify the Linux Installation

The load generator installation includes a setup verification utility, **verify_generator**, that checks the load generator setup on your Linux machine. The verification utility checks environment variables and your startup scripts (`/etc/csh.cshrc`, `${HOME}/.cshrc` or `/etc/profile`, `${HOME}/.profile`) to verify that they are set up correctly.

It is strongly recommended that you run **verify_generator** after installing the load generator, before attempting to invoke the load generator. For details on how to run the **verify_generator** utility, see "[Run verify_generator](#)" below.

The **verify_generator** utility checks the following:

- All the prerequisite software is installed. (This check is performed for 64-bit installations only.)
- There are at least 128 file descriptors
- The `.rhosts` permissions have been defined properly: `-rw-r--r--`
- The host can be contacted by using `rsh` to the host. If not, it checks for the host name in `.rhosts`
- **M_LROOT** is defined
- `.cshrc` or `.profile` defines the correct **M_LROOT**
- `/etc/csh.cshrc`, `${HOME}/.cshrc` or `/etc/profile`, `${HOME}/.profile` defines the correct **M_LROOT**
- `.cshrc` or `.profile` exists in the home directory
- The current user is the owner of the `.cshrc` or `.profile`
- A Linux load generator 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

Run verify_generator

It is recommended that you run the **verify_generator** utility after installing the load generator, before attempting to invoke the load generator. For details on what is checked by the **verify_generator** utility, see "[Verify the Linux Installation](#)" above.

Note:

- To run this command, you must be a "normal" user and not root user.
- Before you run the **verify_generator** utility, make sure that you have set the `DISPLAY` environment variable on your machine.

To run verify_generator:

1. From the **<Load Generator installation directory>/bin** folder, run the following command:

```
./verify_generator
```

For example:

```
/opt/HP/HP_LoadGenerator/bin/verify_generator
```

If you want to receive detailed information about the checks, you can use the `-v` option, as follows:

```
./verify_generator -v
```

2. View the results.
 - If the settings are correct, **verify_generator** returns **OK**.
 - If any of the settings are incorrect, **verify_generator** returns **Failed**, and suggestions on how to correct the setup.

Check the Controller Connection

If the LoadRunner Controller will connect remotely to the load generator using **rsh** (remote shell), you need to make sure that the load generator can be remotely accessed by the Controller.

1. On the load generator machine, locate the **.rhosts** file which is located in the user home directory.
2. In the **.rhosts** file, verify that the Controller is included in the list of machines. If it is not listed, add it to the list.

If the Controller still cannot connect to the load generator, contact your system administrator.

Connecting to a Linux Load Generator Without Using rsh

You can configure the Controller to connect to the load generator without using **rsh**. In this case, you need to activate the agent daemon on the load generator, as described below.

This section describes how to connect to a Linux load generator without using **rsh**.

1. On the Linux load generator, run the agent daemon by entering the following command from **<Load Generator installation directory>/bin**:

```
./m_daemon_setup -install
```

This runs a daemon called **m_agent_daemon**, and if successful, you receive a message: **m_agent_daemon <process ID>**.

The agent now keeps running, even if the user is logged off. You can stop the agent by using the command explained in step 9 below, or by rebooting the machine.



Note: If you look at the **m_agent_daemon[xxx].log** log file in the temp directory, you may

see communication errors, even if the installation succeeded.

2. In the Controller, select **Scenario > Load Generators**. The Load Generators dialog box opens.
3. Click **Add**. The Load Generators dialog box opens.
4. In the **Name** box, enter the name of the computer on which the load generator is running.
5. From the **Platform** list, select **Linux**.
6. Click **More**.
7. Click the **Linux Environment** tab, and make sure that the **Don't use RSH** check box is selected.
8. Connect as usual.
9. To stop the agent daemon, run the following command from the **<LR_root>/bin** directory:

```
./m_daemon_setup -remove
```

This stops the **m_agent_daemon** daemon, and if successful, you receive the message: **m_agent_daemon is down**.

Install a Load Generator Using Docker

This section describes how to install the load generator on a Linux platform using Docker.

Docker is a platform that allows you to develop, ship, and run applications via a container. Docker uses a standard container format that lets developers prepare applications inside containers, while system administrators and other teams, such as Quality Assurance engineers, run the container in order to deploy the application. For details regarding Docker, see <https://docs.docker.com>.

To set up an installation through Docker:

Install Docker

Install Docker on the target machine, along with its dependencies. Currently, only the 64-bit version is supported. For installation details, see <https://docs.docker.com/installation>.

Set up the environment

Set up the target machine environment as required.

Obtain the Dockerfile image

Locate the base load generator image. Use the image provided on the DVD (in the **InsData** folder of the ISO file) or obtain one from the [Docker hub](#).

If you need to customize your settings, you can start a container and install the load generator manually. Alternatively, you can create your own Dockerfile. Use the sample Dockerfile contents provided below, and edit them to fit your specific needs.

Build a custom Dockerfile image (optional)

Create a custom Dockerfile using the [sample](#) below as a basis for your custom file. Once you have the

file, follow these steps to build an image:

1. Place your Dockerfile and the load generator installation folder, **VM** (containing inst64.bin, unzip, and installer.sh), together in the same folder.
2. Switch to root user. Make sure you have Internet access and the ability to install dependencies.
3. In the directory which contains Dockerfile, type:

```
docker build -t load_generator ./
```

Import the base image

Import the image from the tar archive using the following command:

```
docker load < load_generator.tar
```

Set the proxy (optional)

If you need to set a proxy for a target image, set it in the Dockerfile using the following command:

```
ENV http_proxy http://my_proxy_name:port
```

Start a container and launch the load generator

Check that port 54345 is available and not being used by another process. This is the default port used by the Controller. Use the following command to run the load generator in the background, in detached mode.

```
docker run -d -i -p 54345:54345 --net=host  
performancetesting/load_generator.
```

If you need to use a different port, type

```
docker run -id -p <host_port>:54345 performancetesting/load_  
generator
```

If you specify a non-default port, you also need to modify the port on the Controller side.

Tips and Guidelines

- Use `docker ps` to list the containers that are running.
- Use `docker stop <container>` to stop the load generator service.
- The Dockerfile container has an ENTRYPOINT section. The container first runs the commands in ENTRYPOINT. It sets up the environment and then starts the load generator. The command uses a While loop to wait for input, in order to keep the container from exiting. This behavior prevents you from accessing the container while it is running. Make sure to add `-i` while starting the container; otherwise the While loop will consume an excessive amount of CPU.
- If you need entry into the container, add an argument such as `--entrypoint=/bin/bash` when starting the container. After entering the container, set the load generator environments and start the load generator. You can then switch to the host using `CTRL+p` and `CTRL+q` while keeping

the container running in background. To access the container again, use the `docker attach container_id` command.

- To access the host network directly, add `--net=host`. We recommend you add this flag if the AUT generates a lot of network activity.

Sample Dockerfile Content

The following example shows how to build an image. It sets a proxy enabling the container to connect to the Internet and then installs the load generator prerequisites. It then copies the load generator installation files to the container and installs it silently. Lastly, it sets an ENTRYPOINT which tells the container what to execute when starting.

```
# sudo docker build -t load generator /
```

Set the base image

```
FROM ubuntu:14.04
```

Set the proxy

```
# ENV http_proxy http://my_proxy_name:port
```

Install prerequisites for Load Generator

```
RUN dpkg --add-architecture i386
```

```
RUN apt-get update && apt-get install -y libc6-i386 lib32stdc++6 lib32ncurses5  
libkeyutils1:i386 libglib2.0-0:i386 libidn11:i386
```

Copy the Load Generator installation files to a temporary folder

```
RUN mkdir /opt/tmp_LG
```

```
ADD VM /opt/tmp_LG
```

Install the Load Generator

```
RUN /bin/bash -c "cd /opt/tmp_lg; source ./installer.sh -i silent"
```

Remove the installation files

```
RUN rm -R /opt/tmp_LG
```

#Start the container. If you need entry to the container, add `--entrypoint` to overwrite the ENTRYPOINT. If you do not need entry to the container, use `-id` to start the container.

```
ENTRYPOINT ["/bin/bash", "-c", "cd /opt/HP/HP_LoadGenerator/; source env.sh; cd bin/; ./m_  
daemon_setup -install; while true; do cat; done"]
```

Improve Load Generator Performance

This section includes recommendations for improving load generator performance. You can increase the number of file descriptors, process entries, and amount of swap space by configuring the kernel.

Note: Most operating systems using the Linux load generator have sufficient default file

descriptors, process entries, and swap space, and rarely require reconfiguration.

This section includes:

- [Increase File Descriptors](#) 33
- [Increase Process Entries](#) 34
- [Increase Swap Space](#) 34

Increase File Descriptors

A load generator uses the following File Descriptor resources:

- 14 file descriptors for the launch service
- 20 file descriptors for the agent
- 30 file descriptors for each Vuser driver. By default, there is a driver for every 50 Vusers.
- File descriptors for the running Vusers. Each Vuser requires two descriptors.

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

Descriptors	Purpose of the descriptors
14	For the launcher
20	For the 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.

The procedure to increase the number of file descriptors differs between shells.

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

- For sh and ksh users, type:

```
ulimit -n 1024
```

- For csh users, type:

```
limit descriptors 1024
```

Below is an alternate procedure to increase file descriptors. In this example, 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.

Increase Process Entries

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

This 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.

Increase Swap Space

Each Vuser requires swap space ranging in size 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.

Uninstall the Load Generator from a Linux Machine

You can use the Load Generator Setup Wizard to uninstall the load generator, as described below. If you want to perform an upgrade for your load generator, you will need to uninstall the existing one.

Note that the last step in the procedure enables you to perform either a regular uninstall or a silent uninstall.

To uninstall the load generator:

1. Make sure that you are logged in as the same user who installed the load generator.
2. Make sure that the **m_agent_daemon** process is not running on the machine. If it is running, kill its process:

```
cd /opt/HP/HP_LoadGenerator/bin;./m_daemon_setup -kill;su -;
```

3. Change the current directory to the installation directory:

```
cd <path_to_installation_folder>/_HP_LoadGenerator_Installation
```

4. Switch to super user.

To run the uninstall wizard, run the following command and follow the instructions in the wizard.

```
sh ./Change_HP_LoadGenerator_Installation
```

To perform a silent uninstall, run the following command:

```
sh ./Change_HP_LoadGenerator_Installation -i silent
```

Troubleshoot the Load Generator Linux Installation

This section describes troubleshooting tasks relating to the setup of the Linux load generator.

This section includes:

- ["Environment variables were not set correctly in the system-wide startup scripts" below](#)
- ["Error when installing the Load Generator on a Linux platform" on page 38](#)
- ["Error when running Load Generator on RedHat Enterprise Linux 5.x with SELinux enabled" on page 38](#)
- ["Environment variables are not unset after uninstalling the load generator" on page 39](#)
- ["Unable to run Vusers on the load generator" on page 39](#)

Environment variables were not set correctly in the system-wide startup scripts

To enable the load generator to run, the system-wide startup scripts must be modified to set specific environment variables. The required modifications to the startup scripts are made by the Load Generator Setup Wizard. If the startup scripts were not correctly modified during the setup of the load generator, you can manually make the required changes to the startup scripts as described below. The required changes differ slightly between C shell users, and Bourne and Korn shell users.

- **Manually modifying the startup scripts for C shell users**

During the load generator installation process, the setup wizard creates the **env.csh** script. This script includes the commands to set the required environment variables for C shell users. A sample **env.csh** script is shown below.

```
setenv PRODUCT_DIR <Load Generator installation directory>
setenv M_LROOT ${PRODUCT_DIR}
```

```
if ( ! $?PATH ) then
    setenv PATH ""
endif
setenv PATH ${M_LROOT}/bin:${PATH}"
```

Add the following line to the **/etc/csh.cshrc** or **~/.cshrc** startup script to execute the **env.csh** script during the shell startup:

```
source <Load Generator installation directory>/env.csh
```

For example:

```
source /opt/HP/HP_LoadGenerator/env.csh
```

The effect of making the above modification to the startup script is similar to the modifications that are made by the setup wizard. A sample of the modifications that the setup wizard makes to the **/etc/csh.cshrc** startup script is shown below:

```
# New environment setting added by HP_LoadGenerator on Wed Jan 30 16:20:10 IST 2013
2.
# The unmodified version of this file is saved in /etc/.login1557000131.
# Do NOT modify these lines; they are used to uninstall.
setenv PRODUCT_DIR "/opt/HP/HP_LoadGenerator"
# End comments by InstallAnywhere on Wed Jan 30 16:20:10 IST 2013 2.
# New environment setting added by HP_LoadGenerator on Wed Jan 30 16:20:10 IST 2013
5.
# The unmodified version of this file is saved in /etc/.login1557000131.
# Do NOT modify these lines; they are used to uninstall.
setenv M_LROOT "/opt/HP/HP_LoadGenerator"
# End comments by InstallAnywhere on Wed Jan 30 16:20:10 IST 2013 5.
# New environment setting added by HP_LoadGenerator on Wed Jan 30 16:20:10 IST 2013
8.
# The unmodified version of this file is saved in /etc/.login1557000131.
# Do NOT modify these lines; they are used to uninstall.
if ( ! $?PATH ) then
setenv PATH ""
endif
```

```
setenv PATH "/opt/HP/HP_LoadGenerator/bin:${PATH}"  
# End comments by InstallAnywhere on Wed Jan 30 16:20:10 IST 2013 8.
```

- **Manually modifying the startup scripts for Bourne and Korn shell users**

During the load generator installation, the setup wizard creates the **env.sh** script. This script includes commands to set the required environment variables for Bourne shell and Korn shell users.

Add the following line to the **/etc/profile** or **~/.profile** startup script to execute the **env.sh** script during the shell startup:

```
source <Load Generator installation directory>/env.sh
```

For example:

```
source /opt/HP/HP_LoadGenerator/env.sh
```

The effect of making the above modification to the startup script is similar to the modifications that are made by the setup wizard. A sample of the modifications that the setup wizard makes to the **/etc/profile** startup script is shown below:

```
# New environment setting added by HP_LoadGenerator on Fri Jan 18 11:14:24 IST 2013  
1.  
# The unmodified version of this file is saved in /etc/profile1806316421.  
# Do NOT modify these lines; they are used to uninstall.  
PRODUCT_DIR=/opt/HP/HP_LoadGenerator  
export PRODUCT_DIR  
# End comments by InstallAnywhere on Fri Jan 18 11:14:24 IST 2013 1.  
# New environment setting added by HP_LoadGenerator on Fri Jan 18 11:14:24 IST 2013  
4.  
# The unmodified version of this file is saved in /etc/profile1806316421.  
# Do NOT modify these lines; they are used to uninstall.  
M_LROOT=/opt/HP/HP_LoadGenerator  
export M_LROOT  
# End comments by InstallAnywhere on Fri Jan 18 11:14:24 IST 2013 4.  
# New environment setting added by HP_LoadGenerator on Fri Jan 18 11:14:24 IST 2013  
7.  
# The unmodified version of this file is saved in /etc/profile1806316421.  
# Do NOT modify these lines; they are used to uninstall.  
PATH="/opt/HP/HP_LoadGenerator/bin:${PATH}"
```

```
export PATH

# End comments by InstallAnywhere on Fri Jan 18 11:14:24 IST 2013 7. LoadRunner
settings #PATH=${M_LROOT}/bin:$PATH; export PATH
```

Error when installing the Load Generator on a Linux platform

When you use the **source installer.sh** command to install the load generator version 12.55 on a Linux machine on which the load generator version 12.55 was previously installed, you may receive the following error message:

"An error occurred while trying to manage the selected instance."

Solution:

1. Open the registry file **/var/.com.zerog.registry.xml** and locate the element **"product"** with attribute **"name"="HP_LoadGenerator"**.

For example: `<product name="HPE_LoadGenerator" id="77f695c1-1f0c-11b2-883d-c486a85f6555" version="12.55.0.0" copyright="2017" info_url="http://www.hpe.com" support_url="http://www.hpe.com" location="/opt/HP/HP_LoadGenerator" last_modified="2016-06-21 13:12:14">`

2. Record the value of the **"location"** attribute.
3. Remove the entire directory that is referred to by the **"location"** attribute.
4. Delete the registry file **/var/.com.zerog.registry.xml**.
5. Rerun the **source installer.sh** command.

Error when running Load Generator on RedHat Enterprise Linux 5.x with SELinux enabled

During use of the load generator on RHEL 5.x, you might receive the following error:

"m_agent_daemon: error while loading shared libraries: /opt/HP/HP_LoadGenerator/bin/liblwc_cryptolib.so: cannot restore segment prot after reloc: Permission denied."

This problem occurs because SELinux is installed and enabled on the machine. SELinux is preventing the specified shared library from loading.

Solution:

There are two possible workarounds:

1. Before using the load generator, disable SELinux using the command `"setenforce 0"`.
2. If you want to keep SELinux enabled, you can change the security context of all problematic libraries (for example, `<Path_to_LoadGenerator>/bin/*.so` to `"textrel_shlib_t"`).
To do this, execute the command: `"chcon -t textrel_shlib_t <Path_to_LoadGenerator>/bin/*.so"`

Environment variables are not unset after uninstalling the load generator

When you uninstalled the Linux load generator, the setup wizard might not have unset the load generator environment variables (M_LROOT, PRODUCT_DIR, and PATH) for the current shell. To unset the environment variables, close the current shell session and invoke a new one, or manually unset the variables as described below:

- To unset the M_LROOT and PRODUCT_DIR variables:
 - [bash shells] Use the **unset** command.
 - [csh shells] Use the **unsetenv** command.
- To update the PATH variable to exclude the load generator binary directory, type:
 - [bash shells] `PATH=<required list of paths>; export PATH`
 - [csh shells] `setenv PATH <required list of paths>`

Unable to run Vusers on the load generator

If you are unable to run Vusers on the load generator, no specific error is reported, and the Vuser protocol requires a third-party application or client to be present on load generator side, check the dynamic libraries used by the application. This will enable you to establish if any shared objects cannot be found. A shared object that cannot be found may indicate either a missing prerequisite package or an environment variable issue.

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

```
ldd application_name
```

For example, type `ldd mdrv` to determine if all the dependencies of the **mdrv** executable can be found. If any dependencies are not found, run **verify_generator** as described in ["Run verify_generator" on page 28](#).

Note: If you are running Vusers for a protocol that requires a client installation (for example, Oracle), make sure that the path for the client libraries is included in the dynamic library path environment variable (LD_LIBRARY_PATH or SHLIB_PATH).

Chapter 4: Managing Licenses

LoadRunner is delivered with a Community Bundle license (this replaces the Instant-on license). The Community Bundle provides the following features:

- A permanent bundle with that lets you run 50 Vusers.
- All protocols are included except for GUI (UFT), COM/DCOM and protocols in the template bundle such as C and Java Vusers.

To run additional Vusers from the LoadRunner Controller, you need the appropriate LoadRunner licenses. These licenses must be available on the computer on which the LoadRunner Controller is installed.

You use the LoadRunner License Utility to manage your LoadRunner licenses. The LoadRunner License Utility enables you to:

- View the details of licenses that are currently installed
- Install additional licenses

This chapter includes:

- [Install New Licenses](#) 40
- [View License Information](#) 41
- [Troubleshoot Licenses](#) 44

Install New Licenses

After you receive your license information from your HPE representative, you can use the HPE LoadRunner License Utility to enter the license information.

You install a new license using either the license key or the license file provided by HPE.

- **License key.** A license key enables you to install just a single license at a time. You may receive the license key directly from HPE, or the license key may be included in a license file that you receive from HPE.
- **License file.** A license file contains the license keys for one or more licenses. When you use a license file to install the new licenses, the LoadRunner License Utility reads the license file and extracts all the license keys that are included in the license file. You can then select which of the available licenses to install. You may choose to use a license file to install LoadRunner licenses because the license file enables you to install multiple licenses simultaneously.

To install a new LoadRunner license:

1. **Open the LoadRunner License Utility.**
 - a. In legacy Windows operating systems, click **Start > All Programs > HPE Software > HPE LoadRunner > License > LoadRunner License Utility.**or

In icon-based desktops such as Windows 8, search for **License** and select the **LoadRunner License Utility** item.

The HPE LoadRunner License Utility opens.

- b. In the LoadRunner License Utility, click **Install New Licenses**. The LoadRunner License Utility - New License dialog box opens.
2. **To install using a license file:**
 - a. Click the **Browse** button to the right of **License file**, and locate the license file that was sent to you by HPE.
 - b. Click **View License File Content** to display details of the licenses that are included in the license file.
 - c. In the list of licenses included in the license file, select the licenses to install.
3. **To install using a license key:**
 - a. Click **Install a license using a license key**.
 - b. Enter the license key that you received from HPE.
4. **Complete the installation.**
 - a. Click **Install**. The selected licenses are installed.
 - b. Click **Close**. In the License Summary table, make sure that the new licenses appear in the list of installed licenses.

View License Information

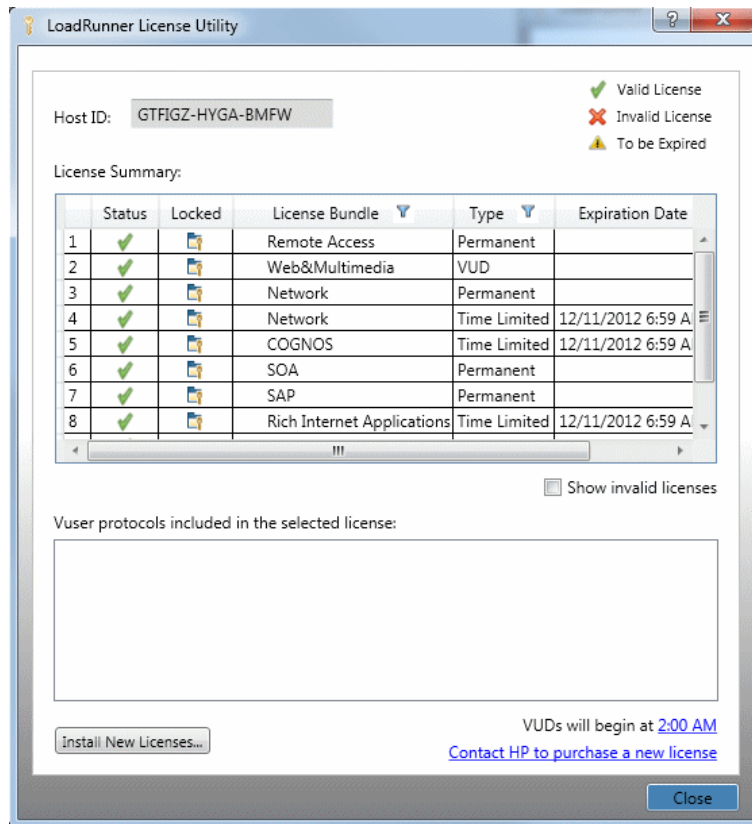
You can use the HPE LoadRunner License Utility to view your license information.

The **Community** license provides 50 permanent Vusers at no cost. These Vusers are valid for all protocols except for GUI (UFT), COM/DCOM, and template protocols.

To view your license information:

In legacy Windows operating systems, click **Start > All Programs > HPE Software > HPE LoadRunner > License > LoadRunner License Utility**.

In icon-based desktops such as Windows 8, search for **License** and select the **LoadRunner License Utility** item. The HPE LoadRunner License Utility opens.



The HPE LoadRunner License Utility displays the following information:

- **Host ID.** Identifies the computer on which the Controller is installed. You may need to provide the Host ID when purchasing new LoadRunner licenses. To obtain new LoadRunner licenses, click the Contact HPE to purchase a new license link at the bottom of the LoadRunner License Utility.
- **License Summary.** Displays a list of the LoadRunner licenses that are installed on the Controller computer. Click on any license in the table to display additional details about the license. The User protocols included in the selected license box displays a list of the User protocols that are included in the selected license.
- **Status.** Indicates the status of the license.
 - **Valid.** Indicates that the license is current and functional.
 - **Invalid.** Indicates that the license is no longer valid. An Evaluation license becomes invalid if a Time limited, Permanent, or VUD license is installed for the same User bundle. A VUD license becomes invalid when the remaining capacity is zero. By default, the License Summary table does not show invalid licenses. Select the **Include invalid licenses** check box to show invalid licenses. Note that a license may become temporarily invalid if the LoadRunner License Utility detects that the system clock has been tampered with. To restore the affected licenses, reset the system clock to the current time.
 - **To be Expired.** Indicates that the license will expire within 30 days.
- **Locked.**

- **Locked.** Indicates that the license can be installed only on the computer on which it is currently installed – not on any other computer.
- **Unlocked.** Indicates that the license can be installed on any computer.
- **License Bundle.** Indicates the name of the Vuser protocol bundle to which the license applies. The license enables the Controller to run Vusers of any protocol that is included in the protocol bundle. To display a list of the Vuser protocols that are included in a bundle, click the license in the License Summary table. A list of the associated Vuser protocols is displayed at the bottom of the LoadRunner License Utility.

Note that a Partner License icon that appears to the left of a license bundle indicates that the license is for a LoadRunner partner, and not for standard Vuser protocols. Partner licenses enable third-party applications to be controlled by the LoadRunner Controller. Partner licenses operate the same as standard LoadRunner licenses.

- **Type.** Indicates the type of license:
 - **Freemium** licenses are installed when LoadRunner is first installed.
 - **Evaluation** licenses are supplied to enable potential customers to evaluate LoadRunner functionality.
 - **Time limited** licenses are valid for a limited period only. Time limited licenses are typically issued for 60 or 365 days.
 - **Permanent** licenses do not expire - there is no time limit to the validity of these licenses.
 - **VUD** licenses are issued with a limited capacity. The capacity is defined by the measurement Vuser-days or VUDs. For example, the capacity of a VUD license may be 1000 VUDs. Each day that the Controller is used to run Vusers, the maximum number of Vusers that ran simultaneously on that day is deducted from the remaining license capacity. If a maximum of 200 Vusers ran on day 1, then 800 VUDs remain in the license.

For example, assume that you purchase a license for 100 VUDs, and then run 3 different scenarios within the same 24 hour period, with 20 Vusers in each scenario. At the end of that period, only 20 VUDs (and not 60) are deducted from your total number of available VUDs, leaving you with 80 remaining VUDs which can be used at any time in the future.

- **Expiration Date.** Indicates the date and time when **Time limited**, and **Evaluation** licenses expire.
- **Capacity.** Indicates the capacity of the selected license:
 - For **Evaluation, Time Limited, and Permanent licenses, Capacity** indicates the maximum number of Vusers [of the type specified by the license bundle] that can be run simultaneously from the LoadRunner Controller.
 - For VUD licenses, **Capacity** indicates the number of VUDs that remain in the license.
- **Show invalid licenses.** Select this check box to show invalid licenses in the list of LoadRunner licenses that are installed.
- **Vuser protocols included in the selected license.** Displays the Vuser protocols that are included in the selected license.
- **Install New Licenses.** Opens the New License dialog box which enables you to install new LoadRunner licenses.

Troubleshoot Licenses

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

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. The license key must include the required spaces. The license key is case sensitive.
- If you receive a permission denied error message during Controller startup, you must grant Full Control permission for the Registry's HKEY_LOCAL_MACHINE key as described below.

To add registry permissions:

1. Run **regedit** 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. Click **OK**.

Send Us Feedback



Let us know how we can improve your experience with the Installation Guide.

Send your email to: docteam@hpe.com