



TOTALVIEW[®] FOR HPC INSTALLATION GUIDE

Version 2018.3

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Chapter 1

Installing TotalView® for HPC

Overview

This document provides information about installing TotalView® for HPC.

The TotalView bundle includes the code for both TotalView and MemoryScape. At the end of installation, you will have both products installed on your system.

Please contact us if you have problems installing TotalView, have questions that are not answered in the product documentation or on our Web site, or suggestions for new features or improvements.

- **By email:** support@roguewave.com
- **By phone:** See Rogue Wave's [Technical Support page](https://support.roguewave.com/) (<https://support.roguewave.com/>) for support numbers.

If you are uncertain whether your TotalView license is valid for this release of TotalView, see “[Is My License Valid for this Release?](#)” on page 20.

Step 1: Unbundling Downloaded Files

Most distributions of TotalView are delivered via the web site as tar file distributions. Use the **tar** command to extract the TotalView files. For example:

```
tar xvf totalview_version_platform.tar
tar xvf totalview.version-doc.tar
```

The CRAY distribution of TotalView is an rpm file. Please see the section [Cray XT Installation](#) for instructions how to install TotalView on Cray.

Step 2: Running the Install Program

Before you can run TotalView, obtain a license using the form located at <https://www.roguewave.com/products-services/request-demo>.

This section describes how you install a new version of TotalView. Before starting, read the *Release Notes* on the [TotalView documentation web site page](#). In addition, some operating systems may need to be patched. For more information, see the *TotalView Platforms and System Requirements* guide.

Here is the procedure for installing TotalView:

1. (Optional) Go to the system upon which you will be installing TotalView and become the root user:

```
su root
```

In some circumstances (particularly on a Macintosh), you'll want to use the **sudo** command instead of **su**. If you use the **sudo** command, you'll be typing `sudo ./Install` instead of `./Install` in step 2.

Installing TotalView as the **root** user prevents users from modifying the software. However, you should not run TotalView as **root**.

2. Go to the directory containing the files extracted from the downloaded tar file and then start the **Install** program by typing:

```
./Install
```

For information on using this command, type `./Install -help`. If you use any of the options described in this displayed information, the installation procedure is no longer interactive.

3. The **Install** program asks you to accept the license terms for TotalView. You can respond **Yes** to accept, **No** to decline, or **?** to view the license terms. You must accept the license terms to continue the installation.
4. The **Install** program asks that you name an installation directory. If the directory you specify does not exist, the program requests a new location, effectively meaning the directory you specify must already exist.

If you do not enter a name, the installation directory will either be `/usr/toolworks` or `/opt/toolworks`—this is system-dependent. Type a period `."` to place TotalView in your current directory.

This manual refers to the installation directory's pathname as *installdir*.

The **Install** program then creates a **toolworks** directory and places two subdirectories within it:

- `totalview.version`. This is where **Install** places TotalView.
- **License directory**. This is where **Install** places the license manager. The location differs depending on your operating system. See "[License Installation Quick Setup](#)" on page 8 for detail.

5. You are now asked to select which components you wish to install.

If you are installing TotalView for multiple platforms in a common NFS directory, you only need to install the common components once.

6. The **Install** program asks if it should create a symbolic link (named **totalview**) to this installation directory. If you are not the root user, **Install** cannot create the link, so you should answer “n” (no). If **Install** cannot create the link, you can ignore its complaints and continue installing TotalView by pressing Enter.
7. If you became root using **su**, exit from root after **Install** concludes by typing:
`exit`
8. Test if TotalView was successfully installed by typing:
`installdir/toolworks/totalview.version/bin/totalview`
TotalView prints information that includes a version number and a message indicating that a license file is not installed.

If TotalView cannot initialize the license manager, it prints the following message:
`Unable to initialize TotalView license`
If your license is not set up properly, see “[License Installation Quick Setup](#)” on page 8 for information on setting it up.

Step 3: Configuring Your Environment

Before you can begin using TotalView, you must add TotalView to your **PATH** variable. On some systems, you may need to mount the `/proc` directory.

Cray XT Installation

Install TotalView where it is visible from your Linux login nodes. Do not install TotalView on your compute nodes. TotalView communicates with these nodes using a library created Cray.

Installing

The Cray distribution is an rpm file, and so you need to run **rpm** to install it.

Before installing, if you know you want to install the package as the default version, first set the environment variable `CRAY_INSTALL_DEFAULT` as follows:

```
export CRAY_INSTALL_DEFAULT=1
```

Note that you do not need to make this decision upfront. You can install TotalView first, and if you decide later to make this package the default you can execute the following:

```
/opt/cray/admin-pe/set_default_files/set_default_totalview_version  
/opt/cray/admin-pe/set_default_files/set_default_totalview-support_version
```

To install TotalView on Cray, you should run the **rpm** command as follows:

```
rpm -ivh cray-totalview-version-totalview-support-version_linux_x86_64.rpm
```

Then Install the license (see [License Installation Quick Setup](#)).

About the Install

In contrast to the standard TotalView installation, the Cray installation doesn't ask where it should install TotalView as it knows where to install files.

The **rpm** application places the Cray bulk launching system and other support modules within the installation directory.

TotalView on Cray XT systems uses **totalview-support** product components to provide essential interface components that allow TotalView to execute in Cray environments. Included within **totalview-support** are the **totalview-mem-debug** module, a configuration file, and a set of bulk launcher executables.

The bulk launcher is a paired set of executables that use ALPS to scalably launch the TotalView Debugger Server (`tvdsvr`) executable on compute nodes.

Mac OS X Installations

A number of issues can arise with Apple Mac OS X installations that will need attention to successfully launch TotalView. Running the install script should not yield any errors. Please read Troubleshooting Mac OS X Installations in the *Reference Guide* for further details.



Chapter 2

License Installation Quick Setup

Overview

NOTE >> These license setup instructions are for all platforms except Linux PowerLE and ARM64. For those platforms, see [Chapter 3, “License Setup: Linux PowerLE & ARM64,”](#) on page 11.

The procedure to install a license differs, depending on whether the installation is for a new TotalView install or updating an existing TotalView install.

- For a new TotalView install, see [Installing a New License](#).
- For an existing TotalView install, see [Updating an Existing License](#).

NOTE >> If you encounter problems using the setup steps in this quickstart, see [Installing or Changing a Regular License](#) for more detailed instructions.

Updating an Existing License

Your TotalView license is implemented by FlexNet which is built into TotalView.

New releases of TotalView may infrequently incorporate updated FlexNet versions. Consult the TotalView release notes to determine if a FlexNet update has been applied.

If your TotalView release does include a newer FlexNet version than that which is currently installed on your system, choose the [FlexNet Update](#) installation option.

Otherwise, complete the steps in the [No FlexNet Update](#) section.

FlexNet Update

1. Stop the currently running license server:
`<installdir>/toolworks/flexlm-<oldversion>/bin/toolworks_init stop`
2. Open `<installdir>/toolworks/flexlm-<oldversion>/license.dat`, and note the license server manager daemon's TCP/IP port number. This is the last field on the SERVER line (for example: "7127").
3. Next, follow the steps in [Installing a New License](#). When the `Configure_License` script asks for the license server manager daemon's TCP/IP port number, enter the port number as noted above.

No FlexNet Update

1. Modify your `license.dat` file by adding the new license key(s) provided, and removing the TotalView license key(s) that are duplicate (licenses with the same entitlement code) or being replaced and are therefore no longer valid.
2. Run the `toolworks_lmread` script so the running license server will reread your modified `license.dat` file:
`<installdir>/toolworks/flexlm-<version>/bin/toolworks_lmread`
This completes the license install. No further setup is necessary.

Installing a New License

If you have a new TotalView install, this section describes the basics of installing your license.

1. Create a `license.src` file containing the TotalView license key(s) provided.
2. Run the `Configure_License` script to generate the `license.dat`, configuration files, and initialization scripts:
`<installdir>/toolworks/flexlm-<version>/bin/Configure_License`
3. Start the license server by running the command `toolworks_init start`:
`<installdir>/toolworks/flexlm-<version>/bin/toolworks_init start`



Chapter 3 License Setup

License Setup: Linux PowerLE & ARM64

Overview

NOTE >> These license setup instructions are for the platforms Linux PowerLE and ARM64 only. For all other platforms, see [Chapter 2, “License Installation Quick Setup,”](#) on page 8.

Unlike TotalView’s other platforms (which use FlexNet Publisher (FNP) licensing) Linux PowerLE & ARM64 systems use FlexNet Embedded (FNE) licensing. FNE licenses can be served either by an FNE license server or installed locally on the system on which TotalView will run, i.e. called buffer-style.

NOTE >> Demo licenses are essentially buffer-style but are not node-locked to a single machine.

Unlike the FNE licenses, FNP licenses are in a binary format.

See “Prerequisites” on page 12, then choose either:

- “[Installing a Demo or Node-Locked License](#)” on page 13
- “[Installing a License Server](#)” on page 15

Prerequisites

1. To install a license for TotalView on Linux PowerLE and ARM64 systems, the user/administrator must have **sudo** or root privileges
2. To install a served license, the License Server must be installed on a Linux-x86-64 system. The Linux PowerLE / ARM64 TotalView host uses TCP/IP to contact and check out licenses from the FNE license server running as a Linux service on the chosen x86 64-bit machine.
3. A dedicated unprivileged user account is needed on the Linux-x86-64 system that hosts the License Server. See **Create a dedicated unprivileged user account** on page 15.

Installing a Demo or Node-Locked License

Demo and single-system, node-locked licenses do not need a License Server.

NOTE >> Demo and single-system node licenses are distributed with the .bin extension, since they are binary files. If your license has the .dat extension, it is a *served* license. Please follow the instructions in the next section, “Installing a License Server” on page 15.

The license should, by default, reside in the `installdir/toolworks/flexnetls-version` directory of your TotalView installation.

NOTE >> To install the license file in a non-default directory, set your `TV_LICENSE_FILE` environment variable to the file's full pathname. For example:

```
export TV_LICENSE_FILE=nonstandard-dir/license.bin
```

The license file is attached to the email message confirming your download request or is sent to you from Support. It should be named either `license.bin` or `license_demo.bin`. If your email system didn't retain this name, rename it after you save it to disk.

1. Install the license file

Use the same privileges as your TotalView installation. If you used either `sudo` or the root user, use `sudo` or the root user, respectively.

- Copy the license file to the flexnetls-version directory:

```
cp license.bin installdir/toolworks/flexnetls-version  
or
```

- `cp license_demo.bin installdir/toolworks/flexnetls-version`

2. Test that the license file is working

Launch TotalView:

```
installdir/toolworks/totalview.version/bin/totalview
```

Test a program, for example:

```
installdir/toolworks/totalview.version/platform/examples/wave
```

TotalView should come up with no licensing dialogs.

To view license details, see **Help > About TotalView**.

If you are using a demo license, you will receive a permanent license after you purchase TotalView.

Renewing a Node-Locked License

Replace the old license with the new license as described in [Install the license file](#). Then, [Test that the license file is working](#).

Installing a License Server

For served licenses, you must install a License Server on a Linux-x86-64 system. In addition, the license file must reside on the *same system*.

NOTE >> Served licenses are distributed with the .dat extension. If your license is a binary file (with a .bin extension), see “[Installing a Demo or Node-Locked License](#)” on page 13, as those licenses are not served by a license server

The script **Configure_License**, included in the TotalView distribution, configures, installs, and starts the FNE license server.

NOTE >> For served license renewal, skip this section and see “[Renewing a Served License](#)” on page 16.

1. Unpack your TotalView distribution on the Linux license server system

To install the FNE license server software, unpack the Linux PowerLE / ARM64 tar bundle onto the Linux x86 64-bit machine that will host the license server in order to run the Install script from the resulting directory:

```
tar xvf totalview_version_platform.tar -C ~
cd ~/totalview.version
```

2. Run the Install script using sudo (required)

```
sudo ./Install
```

- Accept the license terms, then choose an installation directory, e.g. `/opt`.
- At the prompt, select the components to install: just the FNE common files (**flexnetls-common.tar.Z**).

Once the Install script completes, you should have a `flexnetls-version` directory under `/installdir/tool-works`.

3. Install the License File on the License Server system

Place your Rogue Wave provided FNE license file, `license.dat` into the `flexnetls-version` directory.

4. Create a dedicated unprivileged user account

NOTE >> Skip this step if you already created the user as a prerequisite to installing and running the License Server as discussed in “[Prerequisites](#)” on page 12.

The Linux-x86-64 system must have a dedicated, *unprivileged* user account to run the License Server. Note that:

- The default user account name is *"flexnetls"* but you can rename it if you wish.
- The account must be a dedicated account in order to run the FNE License Server.
- The account must be unprivileged.
- The login shell should be `/bin/sh`.

5. Run the `Configure_License` script using `sudo`

```
cd /opt/toolworks/flexnetls-version
sudo bin/Configure_License
```

`Configure_License` is an interactive script that prompts you while it runs. For example, you need to specify a listening port to use (e.g., 7137) and the username for running the FNE license server (created as a prerequisite or in [Step 4](#)).

6. Set up `TV_LICENSE_FILE`

On the Linux PowerLE or ARM64 TotalView host where TotalView will run, set the environment variable `TV_LICENSE_FILE` to point to the FNE license server using the format `port@host`.

For example:

```
TV_LICENSE_FILE=7137@licserver
export TV_LICENSE_FILE
```

7. Test that TotalView can use the license file

Start TotalView on the host Linux PowerLE or ARM64 system and load a debug target.

For example:

```
installdir/toolworks/totalview.version/bin/totalview
installdir/toolworks/totalview.version/platform/examples/wave
```

TotalView should come up without any licensing dialogs.

To view license details, see **Help > About TotalView**.

Renewing a Served License

1. Replace the existing `license.dat` in the `flexnetls-version` directory under `installdir/toolworks` on the Linux-x86-64 system with the new Rogue Wave-provided updated `license.dat`.
2. Load the new `license.dat`, like so:

```
installdir/toolworks/flexnetls-version/bin/toolworks_reload
```
3. Confirm that the new license is correctly set up, as per [Step 7](#).

Reserving Licenses

The license reservation feature available with the FlexNet Embedded license server allows the license server administrator to control the distribution of the server's license pool. When no reservations are defined, the license server distributes licenses on a first-come, first-served basis to client devices requesting them. However, when the license server administrator defines reservations, the server can preallocate a certain number of TotalView licenses from the pool to specific entities (for example, client devices or users) to help ensure that these entities have access to the licenses they need.

For TotalView licenses, the license server administrator can choose to preallocate the entire pool of licenses, a portion of the licenses, or none of the licenses for users belonging to particular Linux/Unix groups. Any license not reserved remains in the shared pool of licenses and is available on a first-come, first-served basis. The default reservation group for TotalView licenses is "totalview_user" group and is controlled by the **TV::fne_reservation_group_name** variable, defined in the `.tvdrc` file.

1. From the `<installation_dir>/toolworks/flexnetls-2016.08.1-1/linux-x86-64/bin` directory, run the FNE Administration tool to generate a template JSON file.

```
./flexnetlsadmin.sh -server http://<SERVER>:<PORT>/api/1.0/instances/~ -  
reservations -genjson <file>
```

2. Modify the JSON file to set up reservations for a particular group.

The following example creates two reservations. The first (named *group1*) reserves 8 "TotalView_Team" and 10 CUDA licenses for user group "totalview". The second reserves 1 "TotalView_Team" for group "admin". Assuming, you have pool of 10 TotalView_Team and 10 CUDA license, this will also leave one "TotalView_Team" license in shared unrestricted pool.

```
{ "name" : "group1", "reservations"  
[  
  { "hostId":  
    { "value" : "totalview", "type" : "USER" },  
    "reservationEntries": [  
      { "featureName": "TotalView_Team", "featureVersion":  
"2020.1227", "featureCount": 9 }  
    ,  
      { "featureName": "CUDA", "featureVersion": "2020.0727", "featureCount": 10 }  
    ]  
  },  
  { "hostId":  
    { "value" : "admin", "type" : "USER" },  
    "reservationEntries": [ { "featureName": "TotalView_Team", "featureVersion":  
"2020.0727", "featureCount": 1 }  
    ]  
  }  
]
```

3. Load the reservation file into server.

```
sudo ./flexnetlsadmin.sh -server http://<SERVER>:<PORT>/api/1.0/instances/~ -
reservations -load reservations.json
```

where `reservations.json` is the reservation filename.

Once reservations are loaded into the server, you can check on or delete them:

- To check reservations:

```
./flexnetlsadmin.sh -server http://<SERVER>:<PORT>/api/1.0/instances/~ -
reservations
```

or

```
./flexnetlsadmin.sh -server http://<SERVER>:<PORT>/api/1.0/instances/~ -
reservations -group
```

- To delete reservation groups:

```
./flexnetlsadmin.sh server http://<SERVER>:<PORT>/api/1.0/instances/~ -
reservations -delete --group groupID
```



Chapter 4

Installing or Changing a Regular License

Overview

NOTE >> First see the quickstart steps in [License Installation Quick Setup](#) to install a new or updated license. This chapter contains detailed instructions that may be useful for troubleshooting or certain cases.

This chapter describes the procedure for installing or changing a regular license.

- To install TotalView software for the first time with a permanent license, begin with the next section.
- To create a *FlexNet* user account, see [“Creating a FlexNet User Account”](#) on page 23.
- To install TotalView software and use an existing license, see [“Accessing a License Server”](#) on page 23.
- To shutdown and restart the license manager, see [“Starting the License Manager Manually”](#) on page 24.
- If you are installing TotalView Individual, the information you need is [Chapter 6, “Installing TotalView Individual,”](#) on page 35.

To determine if your license is valid for the release you are installing, see [“Is My License Valid for this Release?”](#) on page 20.

Is My License Valid for this Release?

To be valid, the maintenance date for your license must be later than the official release date. You can find the maintenance date for your TotalView installation in:

```
installdir/toolworks/flexlm-version/license.dat
```

Open the file in a text editor and look for a line like this:

```
INCREMENT TotalView_Team toolworks 2014.1231 permanent 20 \
```

The example above indicates a permanent 20 token team license where the maintenance expires December 31, 2014. It will always be valid to run TotalView versions released before the maintenance expiration date of December 31, 2014, but will result in a "license too old" message if you attempt to use it with a version of TotalView released after December 31, 2014.

Planning for a Regular License

TotalView uses the FlexNet® license management software to grant or reject requests to use *TotalView*.

FlexNet was formerly known as FLEXLM, so the string `'flexlm'` still appears in the TotalView product, mainly in code and directory paths.

You do *not* need to install FlexNet if you are using an evaluation license. That is, you only need the information in this chapter after you purchase TotalView and have received your regular license.

Your regular license is associated with a FlexNet license manager host (the license server) and is for a specific number of concurrent licenses or tokens, depending upon the version you purchased.

Rogue Wave provides tools and PDF documentation for using FlexNet.

Choosing a License Server

You will need to install the FlexNet license server the first time you install a regular license. In most cases, the license manager and TotalView reside on the same system. However, you can install them on different systems. The TotalView tar file includes license server software for the platform TotalView runs on. See “[Installing FlexNet Standalone](#)” if your license server's platform differs from that of TotalView.

The license manager should reside on a machine that is reliable, always running, and a permanent part of your local network. And, most importantly, it is accessible. For example, do not place it on the other side of your firewall.

If you already have a FlexNet license manager in your network, you should not include your TotalView license with the other licenses managed by that license manager. If you must combine license managers, consult the FlexNet documentation.

The TCP/IP port number used for the Rogue Wave license manager daemon must be unique and not used elsewhere. You can find port numbers that other FlexNet license managers use in their license files.

Finding a License Server Host ID

When you install TotalView, the installer placed the files for the FlexNet license manager in `installdir/toolworks/flexlm-version`.

To obtain host information, run the `toolworks_hostid` script, as follows:

```
installdir/flexlm-version/bin/toolworks_hostid
```

Do *not* use the UNIX `hostid` command.

This script writes the host name and one or more FlexNet host ID values to standard output; for example:

```
The host name for this machine is: fast-server  
The host ID for this machine is: 08122b2cf32d
```

After sending us this information and completing your order we'll send you a permanent license key.

Creating a FlexNet User Account

While you can run the FlexNet license manager as **root**, you should run it as a unique non-privileged (that is, non-**root**) user. Do this by creating a user account reserved for FlexNet's use. You may need to refer to your operating system's documentation or your site's operating procedures for information on creating this account. The user name does not have to be `flexnet`. Any unique name will do.

The account from which the license manager is run must have the following properties:

- The password is set to `*` because interactive access is not required.
- There is a unique user ID.
- There is a unique group ID.
- The login shell is `/bin/sh`.

Installing your Permanent License

This procedure is described in [Chapter 5, "Installing License Keys,"](#) on page 28.

Accessing a License Server

When you start TotalView, it must be able to find the `license.dat` file in the `flexlm-version` directory. If TotalView and the active license manager are installed on the same host and you place the `license.dat` file in its default location, you can skip to the next section, "[Starting the License Manager Manually](#)" on page 24.

If you are installing TotalView and the license server on different machines, you will must place a `license.dat` file within each installation. Do this by copying the `license.client` file from the license server to `flexlm-version/license.dat` in each installation. If you are using an existing license server, this is all that you have to do.

The format for the `license.client` file is:

```
SERVER host-name host-id port-numberUSE_SERVER
```

For example:

```
SERVER fast-server 08122b2cf32d 7127 USE_SERVER
```

FlexNet ignores all lines after `USE_SERVER`.

Starting the License Manager Manually

You can start or stop the license manager by using the **toolworks_init** script. (This script is created by the **Configure_License** script when you install the license.) If, for example, the license manager software is installed in `/usr/local/toolworks`, the following commands start the license manager. Before entering these commands, use the **su** shell command to become the **root** user.

In some environments, you'll need to use the **sudo** command. If you use this command, you'll type something like **sudo ./toolworks_init start**. Also, before you run this program, make sure that you have write permission to this directory.

```
cd /usr/local/toolworks/flexlm-version/bin
./toolworks_init start
```

Although the start-up script should be run as super-user (**root**), the license manager is started using the FlexNet user ID.

Check that the license manager started. Do this by examining the following file:

```
/usr/local/toolworks/flexlm-version/license.log
```

Stopping the License Manager

The way you stop the license manager is very similar to the way you started it. If the license manager software resides in `/usr/local/toolworks`, the following commands stop the license manager. (Before entering these commands, use the **su** shell command to become the **root** user or use the **sudo** command to directly invoke the following program.)

```
cd /usr/local/toolworks/flexlm-version/bin
./toolworks_init stop
```

Testing the License Manager

To verify that you installed the license manager correctly, manually start it and then run TotalView —don't do this as **root**. After the license manager starts, set the license file variable and test the license installation by typing:

```
installdir/toolworks/totalview/bin/totalview
```

TotalView should respond by displaying its Root window. If it isn't displayed, you should:

- Look at the `flexlm-version/license.log` log file. This file contains status and error messages from the **lmgrd** license server.
- Use the `flexlm-version/platform/bin/lmstat` command, which lists license manager activity. For example, to list the number of licenses that are currently checked out on a **sun5** platform, type:

```
cd /usr/local/toolworks/flexlm-version/sun5/bin
./lmstat -a -c ../../license.dat
```

Starting the License Manager When the System Boots

Most of our customer want the license manager to automatically start when the license server boots. Do this by adding the **toolworks_init** command (see “[Starting the License Manager Manually](#)” on page 24) to the appropriate system start-up file. (Ask your system manager where this should go.) On most systems, you should also automatically stop the license manager when the system shuts down to single-user mode.

You can edit your startup files by running the **Configure_Autostart** shell script, which must be run as **root**. For example, if the license manager software is in the `/usr/local/toolworks` directory, run **Configure_Autostart** using the following commands. (Before entering these commands, use the **su** shell command to become the root user or use the **sudo** command to directly invoke the following program.)

```
cd /usr/local/toolworks/flexlm-version/bin
./Configure_Autostart
```

Configure_Autostart prompts you with some configuration questions and then makes its changes.

Installing FlexNet Standalone

The TotalView tar file includes license server software for the platform TotalView runs on. If your license server's platform differs from that of TotalView, contact support@roguewave.com to obtain a tar file containing the files for your license server's platform.

Use the **tar** command to extract the files from the FlexNet standalone tar file. For example:

```
tar xvf flexlm-version.tar
```

Starting the Install Program

Here is the procedure for installing FlexNet:

1. (Optional) Become the root user on the system where you will install the license server software:

```
su root
```

We recommend that you become the root user when installing FlexNet as this prevents users from modifying the software after you install it.

On some systems, you will use the **sudo** command. In this case, you would invoke the **Install** program in step 2 by typing `sudo ./Install`.

1. From the directory containing the unbundled files, start the **Install** program:

```
./Install
```

For information on using this command, type `./Install -help`. If you use any of the options displayed by this command, the software is non-interactively installed.

2. The **Install** program asks you to accept the license terms. You can respond **Yes** to accept, **No** to decline, or **?** to view the license terms. You must accept the license terms to continue the installation.
3. The **Install** program asks that you name an installation directory. If the directory you specify does not exist, the program requests a new location, effectively meaning the directory you specify must already exist. The **Install** program then creates a `toolworks` directory and places the `flexlm-version` directory within it. Type a period "." if you want **Install** to place FlexNet in your current directory.

If you do not enter a name, the installation directory is either `/usr/toolworks` or `/opt/toolworks`—this is system dependent.

1. You are then asked which components you wish to install. You should install the license common files and the license platform files for your license server.
2. If you became root to install FlexNet, use the **exit** command.

More FlexNet Information

These instructions provide only basic information on installing the FlexNet license manager. For more information, see:

User Guide

A PDF version of the FLEXlm License Administration Guide is installed at `flexlm-version/doc/fnp_LicAdmin.pdf`.

Flexera Software Web Site

FlexNet is a product of Flexera Software. The web site at <https://www.flexera.com/products/software-monetization/flexnet-licensing.html> contains additional information about FlexNet.



Chapter 5

Installing License Keys

Overview

This chapter describes the procedure for installing or changing a regular license. The topics in this chapter are:

- [“Step 1: Locating the FlexNet License Server Directory”](#) on page 29
- [“Step 2: Deleting Older License Keys”](#) on page 30
- [“Step 3: Adding New License Keys”](#) on page 31
- [“Step 4: Starting and Stopping the License Server”](#) on page 32
- [“Step 5: Configuring TotalView to Use the License Server”](#) on page 33
- [“Reporting Problems with License Installation”](#) on page 34

If you are installing TotalView Individual, the installer will install the license keys for you. See [Chapter 6, “Installing TotalView Individual,”](#) on page 35 for more information.

You must install the FlexNet version license management software on the machine you have selected as your license server. FlexNet is included in the TotalView distribution and was installed by the installation script.

Step 1: Locating the FlexNet License Server Directory

Locate the `flexlm-version` directory that was installed in Step 1. This directory should be located in the directory `installdir/toolworks`.

The default values for `installdir` are `/usr` and `/opt` depending on your platform.

Set the **FLEXLM** environment variable to:

```
installdir/toolworks/flexlm-version
```

For example:

```
setenv FLEXLM /usr/toolworks/flexlm-version
```

The **FLEXLM** environment variable is only used during this installation process. The license management daemons do not use or need it.

Step 2: Deleting Older License Keys

If you received new licenses keys because you moved your server or traded in existing license keys, the older license keys are no longer valid and must be removed in order for you to be in compliance with the Rogue Wave Permanent License Agreement.

If you do not need to remove previous license keys, skip to “[Step 3: Adding New License Keys](#)” on page 31.

The host information and license key information for the license keys that you need to remove are included in the email we sent you. For each of these license keys, that email listed:

- The `hostname` of the license server.
- The `hostid` of the license server.
- The FlexNet `INCREMENT` lines that contain the now invalid license key.

Here is how to remove an invalid license key:

1. Locate the machine that corresponds with the `hostid` for the invalid key. Since hostnames are dynamic, you can use the `${FLEXLM}/bin/toolworks_hostid` script to validate the `hostid` of the license server. The FlexNet `hostid` is unique for each license server regardless of `hostname` and IP address changes.
2. Locate the `installdir/toolworks/flexlm-version` directory on the license server.
3. If necessary, become the root user.
4. Make a temporary backup of the existing `${FLEXLM}/license.dat` file. For example:

```
cp ${FLEXLM}/license.dat ${FLEXLM}/license.dat.bak
```
5. Using a text editor, edit the `${FLEXLM}/license.dat` file to delete the `-INCREMENT` and comment lines—comment lines begin with `##`—matching the key being removed. Save this file.
6. If other license keys still exist in the `license.dat` file, tell the license server to reread the `license.dat` and verify that these licenses still work. If they do, you can delete the `license.dat.bak` temporary backup file.

Use the following command to tell the license server to reread your `license.dat` file:

```
${FLEXLM}/bin/toolworks_lmread
```

If no license keys remain in the `license.dat` file, use the following command to stop the license server:

```
${FLEXLM}/bin/toolworks_init stop
```

Step 3: Adding New License Keys

This step describes how to update and create the `license.dat` file that the license manager uses to allow access to TotalView.

If your license server is already serving one or more TotalView licenses (that is, the file `${FLEXLM}/license.dat` already exists), go to “Revising Your `license.dat` File” on page 31.

Adding a New `license.dat` File

The **Configure_License** script, which is located in the `${FLEXLM}/bin` directory—creates the `license.dat` file and the `toolworks_init` script. **Configure_License** needs to read the `license.src` file. This file, which you will create, contains TotalView license keys.

Here is the procedure for creating this `license.src` file:

1. Change to the `flexlm-version` directory on the license server

```
cd ${FLEXLM}
```

2. Copy and paste the new Rogue Wave license keys—this is the information that you received through email—into a file named `license.src` in the `-flexlm-version` directory.

The text in your `license.src` is derived from your host information, number of license keys, and license configurations.

3. Run the `${FLEXLM}/bin/Configure_License` script on the license server. You must run this script while your current directory is `flexlm-version`. The script creates the following files:

- `${FLEXLM}/license.dat`
- `${FLEXLM}/license.opt`
- `${FLEXLM}/license.client`
- `${FLEXLM}/license.log`
- `${FLEXLM}/bin/toolworks_init`

4. Proceed to “Step 4: Starting and Stopping the License Server” on page 32.

Revising Your `license.dat` File

If you are currently using TotalView, you need to revise your `${FLEXLM}/license.dat` file. You do not need to create a new `${FLEXLM}/license.src` file nor do you need to rerun the **Configure_License** script unless you have deleted or changed the location of the `flexlm-version` directory.

If the `${FLEXLM}/license.dat` file does not exist, you will need to follow the procedure described in “[Adding a New license.dat File](#)” on page 31 at the beginning of this topic. Since Rogue Wave does not resupply all of your license keys when there is a license change, you will need to combine the license keys that you already have with the newly delivered keys.

Here is the procedure for revising your existing `license.dat` file:

1. Back up your existing `${FLEXLM}/license.dat` file. For example,

```
cp ${FLEXLM}/license.dat ${FLEXLM}/license.dat.bak
```
2. Using a text editor, edit the `${FLEXLM}/license.dat` file and append the new TotalView license keys delivered in this email message to the end of the `${FLEXLM}/license.dat` file.
3. Tell the license server to reread your `license.dat` file:

```
${FLEXLM}/bin/toolworks_lmread
```

Step 4: Starting and Stopping the License Server

Run the following command as **root** to start the license server.

```
${FLEXLM}/bin/toolworks_init start
```

As an alternative, you can run the commands within this section as an argument to the **sudo** command.

If you configured your license server to run as a non-privileged user, the initialization script ensures that the license management daemons are started and run under the non-privileged user even if you run the script as **root**.

To stop the license manager, become **root**, and then use the following command:

```
${FLEXLM}/bin/toolworks_init stop
```

If you would like the license manager to automatically start when the system is booted, run the following script as **root**:

```
${FLEXLM}/bin/Configure_Autostart
```

Step 5: Configuring TotalView to Use the License Server

TotalView must be able to find the `${FLEXLM}/license.dat` file. If you are running TotalView and the license server in the installation directory on the same machine, you can skip this step.

If TotalView and the license manager are not running on the same machine, you will need to place a `${FLEXLM}/license.dat` file on each additional installation. Copy the `${FLEXLM}/license.client` file from the license server into the `flexlm-version` directory on each remote machine and rename that file to `license.dat`.

As an alternative, you can specify the full path to the `license.dat` file in your `LM_LICENSE_FILE` environment variable. A client-style `license.dat` has the following form:

```
SERVER hostname hostid port-numberUSE_SERVER
```

Reporting Problems with License Installation

If you have difficulties installing your license keys, please send email to support@roguewave.com and include the following:

- Your `license.dat` file.
- Your `license.src` file (if applicable).
- The license delivery email.
- The `license.log` file created when you attempted to start the license manager and TotalView.
- The text displayed in your window when you tried to start the license manager.
- The text displayed in your window when you tried to start TotalView.



Chapter 6

Installing TotalView Individual

This chapter outlines the steps to install TotalView Individual. The installation is less complex than the installation of the full product, and is guided by an installation script.

Before you install TotalView Individual, you must obtain an *entitlement code*. An entitlement code is a string displayed in your browser that is also sent to you after you purchase the product.

In addition, you will need to go to our download area (<https://www.roguewave.com/help-support/update-request>) and download the version for the platform for which you registered TotalView.

Supported Platforms

TotalView Individual supports the following platforms:

- Apple Mac OS X on Intel
- Linux x86
- Linux x86-64

Download and Install

The downloaded file is an executable shell file. For example:

```
sh darwin-x86.sh
```

We recommend that you install TotalView Individual running as root.

This command launches an installation wizard, during which you are prompted to enter your entitlement code.

The installer attempts to contact the Rogue Wave website to validate the entitlement code. If your computer is not connected to the internet, the installer will not install TotalView Individual. Installation is the only time that an internet connection is required.

The installer sends Rogue Wave your host ID, which is associated with your entitlement code. In response, you are sent a license. After accepting the license, the installer installs TotalView Individual and a license manager.

If you lose your entitlement code, contact your salesperson directly or sales@roguewave.com to request that your entitlement code be sent to you.



Installing a Demo License

Overview

NOTE >> These license setup instructions are for all platforms except Linux PowerLE and ARM64. For those platforms, see [Chapter 3, “License Setup: Linux PowerLE & ARM64,”](#) on page 11.

If you are using a product demo, before launching TotalView, place the demo license into the `flexlm-version` directory. This license file `license.demo` is attached to the email message confirming your download request. If your email system didn't retain this name, rename it after you save it to disk.

1. If you installed TotalView as the **root** user, become the **root** user again. If you used **sudo** to install TotalView, use **sudo** in the following step.
2. Copy the license file to the `flexlm-version` directory.

```
cp license.demo installdir/toolworks/flexlm-version
```
3. To test that TotalView can use the license file, type:

```
installdir/toolworks/totalview.version/bin/totalview
```

TotalView responds by displaying its Root window.

After you purchase TotalView, you will receive a permanent license.

Setting the License File Variable

If you do not want to install the `license.demo` file in the `installdir/toolworks/flexlm-version` directory, you must set your `LM_LICENSE_FILE` environment variable to the file's full pathname. For example:

```
setenv LM_LICENSE_FILE nonstandard-dir/license.demo
```

If a `LM_LICENSE_FILE` environment variable already exists, add the pathname for `license.demo` to this variable's declaration. Notice that the `LM_LICENSE_FILE` variable contains a colon-separated list of license file pathnames. For example:

```
setenv LM_LICENSE_FILE  
nonstandard-dir/license.demo:${LM_LICENSE_FILE}
```



Uninstalling TotalView

The Three-Step Removal Process

To remove or uninstall TotalView:

1. If the license server is running, stop it. If the license manager software is installed in **/usr/local/toolworks**, the following commands stop the license manager. Before entering these commands, you may need to use the **su** shell command to become the **root** user or use the **sudo** command to directly invoke the following program.

```
cd /usr/toolworks/flexlm-version/bin  
./toolworks_init stop
```

2. Remove the installation directory. The default location is

```
/usr/toolworks
```

If you have more than one version of TotalView, just remove what you don't want. If you are just removing a version, you do not need to stop the license manager.

3. The home directories of all TotalView users have a **.totalview** subdirectory. Remove it.

If you're not interested in using TotalView after trying it, we'd really appreciate you sending email to **-support@roguewave.com** and letting us know why.

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