NEXTGEN TOTALVIEW FOR HPC INSTALLATION GUIDE

Version 2019.1
Chapter 1

Installing NextGen TotalView for HPC

Overview

This document provides information about installing NextGen TotalView for HPC.

**NOTE >>** Rogue Wave NextGen TotalView for HPC introduces a newly developed, modern interface for the TotalView for HPC debugger. This UI includes the full power of the TotalView debugging engine, but does not yet support all its features. To use these features, simply run the `totalview` executable without the `-newui` argument to launch the original UI.

The installation has two main steps:

- Installing the distribution files.
- Installing and activating the license.

How you proceed with the installation depends on your situation:

- **You have a demo license:** If you are installing NextGen TotalView for HPC to use with a demo license, you need only follow the procedures in this chapter. If you decide to purchase a permanent NextGen TotalView for HPC license, you will proceed on to the other chapters at that time.

- **You are installing NextGen TotalView for HPC for the first time with a permanent license:** Follow the installation steps in this chapter, but when you get to the point of installing the demo license, skip to Chapter 4, which describes how to install the LM license server, and then to Chapter 5, which describes how to install your permanent license.
• **You already have NextGen TotalView for HPC and are installing this new version:** Follow the installation steps in this chapter, but when you get to the point of installing the demo license skip to Chapter 3, which explains how to install your new license. (You should be able to skip over Chapter 2 since you should already have an LM license server installed.)

Please contact us if you have problems installing NextGen TotalView for HPC, 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://library.roguewave.com/) for support numbers.

To determine whether your NextGen TotalView for HPC license is valid for this release of NextGen TotalView for HPC, see “Is My License Valid for this Release?” on page 18.
Installing NextGen TotalView for HPC

Download the tar file version of the installation and use the `tar` command to extract NextGen TotalView for HPC. For example:

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

Before you can run NextGen TotalView for HPC, you must obtain a license. You can obtain one by filling in the form located at http://www.roguewave.com/products-services/request-demo.

This section describes how you install a new version of NextGen TotalView for HPC. Before starting, you should read the Release Notes on the NextGen TotalView for HPC documentation web page. In addition, some operating systems may need to be patched. For more information, see the TotalView for HPC Platforms and System Requirements guide.

Here is the procedure for installing NextGen TotalView for HPC:

1. *(Optional)* Go to the system upon which you will be installing NextGen TotalView for HPC and become the root user:
   ```
su root
   ```
   In some circumstances, 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 NextGen TotalView for HPC as the root user prevents users from modifying the software. However, you should not run NextGen TotalView for HPC 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 the displayed information, the installation procedure is no longer interactive.

3. The `Install` program asks you to accept the license terms for NextGen TotalView for HPC. 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`, depending on the system. Type a period “.” to place NextGen TotalView for HPC 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 NextGen TotalView for HPC.
   ```
— `flexlm-version`: This is where `Install` places the license manager.

5. You are now asked to select which components you wish to install.
   If you are installing NextGen TotalView for HPC 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 NextGen TotalView for HPC by pressing Enter.

7. If you became root using `su`, exit from root after `Install` concludes by typing:
   `exit`

8. Test if NextGen TotalView for HPC was successfully installed by typing:
   `installdir/toolworks/totalview.version/bin/totalview`
   NextGen TotalView for HPC prints information that includes a version number and a message indicating that a license file is not installed.
   If NextGen TotalView for HPC cannot initialize the license manager, it prints the following message:
   `Unable to initialize NextGen TotalView for HPC license`
   If you see this message, you need to confirm that you did install the license. You may need to set the `-LM_LICENSE_FILE` environment variable to the installation directory. (This variable is described in the next step.)

## Configuring Your Environment

Before you can begin using NextGen TotalView for HPC, you must add NextGen TotalView for HPC to your `PATH` variable. On some systems, you may need to mount the `/proc` directory.
Installing a Demo License

Before you can use NextGen TotalView for HPC, you must place the demo license into the `flexlm-version` directory. This license file, which is called `license.demo`, was attached to the email message confirming your download request. If your email system didn't retain this name, you must rename it after you save it to disk.

1. If you installed NextGen TotalView for HPC as the root user, become the root user again. If you used `sudo` to install NextGen TotalView for HPC, 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 NextGen TotalView for HPC can use the license file, type:

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

NextGen TotalView for HPC responds by displaying the initial view of the interface.

After you purchase NextGen TotalView for HPC, 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}
```
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 9.

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:
   
   ```bash
   <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_lmreread` script so the running license server will reread your modified `license.dat` file:
   
   ```bash
   <installdir>/toolworks/flexlm-<version>/bin/toolworks_lmreread
   ```

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
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 6.

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.

See “Prerequisites” on page 10, then choose either:

• “Installing a Demo or Node-Locked License” on page 11
• “Installing a License Server” on page 13

To uninstall, see “Uninstalling an FNE License Server” on page 16.
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 Pow-
   erLE / 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 13.
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 13.

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.

**License Location**

TotalView looks for the license in the default directory `installdir/toolworks/flexnetls-version` of your TotalView installation.

To install the license file in a non-default directory, either:

- Set your `TV_LICENSE_FILE` environment variable to the file's full pathname. For example:
  ```bash
eexport TV_LICENSE_FILE=nonstandard-dir/license.bin
  ```
- Or, create a hidden file to avoid having to set up the `TV_LICENSE_FILE` environment variable for each user. Name this file `.tvlicensefile` and place it in the platform-specific lib directory for the current TotalView version. This file should contain the full path to the demo or node-locked license, which will be used if `TV_LICENSE_FILE` is not set. For example, this file:
  ```bash
  path-to-toolworks/totalview.Version/platform/lib/.tvlicensefile
  ```
  would contain:
  ```bash
  /usr/local/licenses/totalview/license.bin.
  ```

**License Installation**

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 (or to a custom location as discussed in License Location):
     ```bash
     cp license.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.

---

**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 11, 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 14.

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

2. Run the Install script using sudo (required)
   ```bash
   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/toolworks.

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 10.

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, either:
   — 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
     ```
   — Alternatively, to avoid having to set up the TV_LICENSE_FILE environment variable for each user, place the port@host string in a hidden file in the platform-specific lib directory.
     To do this, create a file .tvlicensefile that contains just the port@host string, such as 7137@lic-server. Place this file in /install/path/toolworks/totalview.version/platform/.tvlicensefile, where platform is either linux-powerle or linux-arm64.

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.
Uninstalling an FNE License Server

As the root user (or using `sudo`), perform the following steps to first stop, then remove the running server from the system:

2. Issue the command: `bin/toolworks_init stop`.
3. Delete the `/opt/flexnetls/toolworks` directory.
4. Delete the `/etc/init.d/flexnetls-toolworks` and `/etc/default/flexnetls-toolworks` files.
5. Optionally, delete the trusted storage and/or log files in the `/var/opt/flexnetls/toolworks` directory.
6. Delete the `/install/path/toolworks/flexnetls-<version>` directory.
Installing or Changing a Regular License

Overview

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

- To install NextGen TotalView for HPC software for the first time with a permanent license, see “Planning for a Regular License” on page 19.
- To create a FlexNet user account, see “Creating a FlexNet User Account” on page 21.
- To install NextGen TotalView for HPC software and use an existing license, see “Accessing a License Server” on page 21.
- To shutdown and restart the license manager, see “Starting the License Manager Manually” on page 23.

To determine if your license is valid for the release you are installing, see “Is My License Valid for this Release?” on page 18.
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 NextGen TotalView for HPC installation in:

\texttt{installdir/toolworks/flexlm-version/license.dat}

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

\texttt{INCREMENT TotalView_Codedynamics 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 NextGen TotalView for HPC 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 NextGen TotalView for HPC released after December 31, 2014.
Planning for a Regular License

NextGen TotalView for HPC uses the FlexNet® license management software to grant or reject requests to use NextGen TotalView for HPC.

FlexNet was formerly known as FLEXLM, so the string ‘flexlm’ still appears in the NextGen TotalView for HPC 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 NextGen TotalView for HPC 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.

NOTE >> Configuring license.opt is required for your NextGen TotalView for HPC installation to work.

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 NextGen TotalView for HPC reside on the same system. However, you can install them on different systems. The NextGen TotalView for HPC tar file includes license server software for the platform NextGen TotalView for HPC runs on. See “Installing FlexNet Standalone” if your license server’s platform differs from that of NextGen TotalView for HPC.

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 NextGen TotalView for HPC 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 NextGen TotalView for HPC, 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 many 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”.

Accessing a License Server

When you start NextGen TotalView for HPC, it must be able to find the license.dat file. If NextGen TotalView for HPC and the active license manager are installed on the same host and you place the license.dat file in its default location in the flexlm-version directory, you can skip to the next section, “Starting the License Manager Manually” on page 23.

If you are installing NextGen TotalView for HPC and the license server on different machines, you can 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:

```plaintext
SERVER  host-name host-id port-number
USE_SERVER
```

For example:

```plaintext
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 Licens`e script when you install the license.) If, for example, the license manager software is installed in `/usr/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/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/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/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/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 NextGen TotalView for HPC —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
```

NextGen TotalView for HPC should respond by displaying its main window. If it can't connect to the underlying TotalView debugging engine, 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/toolworks/flexlm-version/sun5/bin
./lmstat -a -c ../../../license.dat
Starting the License Manager When the System Boots

Most of our customers 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 23) 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/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/toolworks/flexlm-version/bin
  ./Configure_Autostart
```

`Configure_Autostart` prompts you with some configuration questions and then makes its changes.
Installing FlexNet Standalone

The NextGen TotalView for HPC tar file includes license server software for the platform NextGen TotalView for HPC runs on. If your license server’s platform differs from that of NextGen TotalView for HPC, 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`.

2. 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.

3. 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.

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. 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.

5. 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.

6. 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**

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 NextGen TotalView for HPC to Use the License Server” on page 33
- “Reporting Problems with License Installation” on page 34

You must install the FlexNet version license management software on the machine you have selected as your license server. FlexNet is included in the 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_lmreread`

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 create or update the license.dat file that the license manager uses to allow access to NextGen TotalView for HPC.

If your license server is already serving one or more NextGen TotalView for HPC licenses (that is, the file ${FLEXLM}/license.dat already exists), go to “Revising Your license.dat File” on page 32.

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 NextGen TotalView for HPC 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 <installdir>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

   NOTE >> If you already have a license.opt file the script asks whether you want to overwrite it. Answer “n” to preserve your existing file with its named users. If you answer “y”, a new file without named users is created, but your existing file is saved as license.opt.old.

   — ${FLEXLM}/license.client
   — ${FLEXLM}/license.log
   — ${FLEXLM}/bin/toolworks_init
Revising Your license.dat File

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

If the $\texttt{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 $\texttt{FLEXLM}/license.dat file. For example,
   \begin{verbatim}
   cp $\texttt{FLEXLM}/license.dat $\texttt{FLEXLM}/license.dat.bak
   \end{verbatim}
2. Using a text editor, edit the $\texttt{FLEXLM}/license.dat file and append the new NextGen TotalView for HPC license keys delivered in this email message to the end of the $\texttt{FLEXLM}/license.dat file.
3. Tell the license server to reread your license.dat file:
   \begin{verbatim}
   $\texttt{FLEXLM}/bin/toolworks_lmreread
   \end{verbatim}

Step 4: Starting and Stopping the License Server

Run the following command as \texttt{root} to start the license server.

\begin{verbatim}
$\texttt{FLEXLM}/bin/toolworks_init start
\end{verbatim}

As an alternative, you can run the commands within this section as an argument to the \texttt{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 \texttt{root}.

To stop the license manager, become \texttt{root}, and then use the following command:

\begin{verbatim}
$\texttt{FLEXLM}/bin/toolworks_init stop
\end{verbatim}

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

\begin{verbatim}
$\texttt{FLEXLM}/bin/Configure_Autostart
\end{verbatim}
Step 5: Configuring NextGen TotalView for HPC to Use the License Server

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

If NextGen TotalView for HPC 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:

```text
SERVER hostname hostid port-number
USE_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 NextGen TotalView for HPC.
• 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 NextGen TotalView for HPC.
Uninstalling NextGen TotalView for HPC

The Three-Step Removal Process

NOTE >> These steps remove a FlexNet Publisher license server. For FlexNet Embedded, see Chapter 3, “Uninstalling an FNE License Server” on page 16.

To remove or uninstall NextGen TotalView for HPC:

1. If the license server is running, stop it. If the license manager software is installed in /usr/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 NextGen TotalView for HPC, 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 NextGen TotalView for HPC users have a .totalview subdirectory. Remove it.

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