

MEMORYSCAPE INSTALLATION GUIDE



VERSION 2.4.0



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Contents

Installing MemoryScape Using tar Files



This document provides information about installing MemoryScape using tar files.

If you are using the installer, you'll find a link to a replacement for this chapter at <http://www.totalviewtech.com/Documentation/>.

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

support@totalviewtech.com
1-800-856-3766 in the United States
(+1) 508-652-7700 worldwide

Step I: Unbundling Downloaded Files

Use the **tar** command to extract the MemoryScape files contained within the installation tar file. These files are either downloaded from our web site or obtained from a CD-ROM. For example:

```
tar xvf memscape-version-platform.tar  
tar xvf memscape-version-doc.tar
```

Step 2: Running the Install Program



Before you can run MemoryScape, you must obtain a demo license. You can obtain one by filling in the form located at <http://www.totalviewtech.com>. After filing in this form, we will email you a demo license.

This section describes how you install a new version of MemoryScape. Here is the procedure for installing MemoryScape:

- 1 (Optional) Go to the system upon which you will be installing MemoryScape 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 MemoryScape as the **root** user prevents users from modifying the software. However, you should not run MemoryScape 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.

The **Install** program asks that you name an installation directory. If the directory you specify does not exist, the **Install** program creates it.

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 MemoryScape 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:

- > **memscape.version**. This is where **Install** places MemoryScape.
- > **flexlm-version**: This is where **Install** places the license manager.

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

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

- 4 The **Install** program asks if it should create a symbolic link (named **memscape**) 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 MemoryScape by pressing Enter.

- 5 If you became root using `su`, exit from root after **Install** concludes by typing:

```
exit
```

- 6 Test if MemoryScape was successfully installed by typing:

```
installdir/toolworks/memscape.version/bin/memscape
```

MemoryScape prints information that includes a version number and a message indicating that a license file is not installed.

If MemoryScape cannot initialize the license manager, it prints the following message:

```
Unable to initialize MemoryScape 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.)

Step 3: Installing a Demo License

Before you can use MemoryScape, 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 MemoryScape as the **root** user, become the **root** user again. If you used **sudo** to install MemoryScape, 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 MemoryScape can use the license file, type:


```
installdir/toolworks/memscape.version/bin/memscape
```

 MemoryScape responds by displaying its Root window **Add Programs** screen.



After you purchase MemoryScape, you will receive a permanent license. For more information, refer to the TotalView Installation Guide. You will find this guide within the TotalView help or on our web site at <http://www.totalviewtech.com/Documentation>.

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

Step 4: Configuring Your Environment

`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}
```

Step 4: Configuring Your Environment

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

On Compaq UNIX and IRIX, you must typing:

```
ls /proc
```

If it is mounted, the `ls` command prints a list of numbers. If you see an error message, or no message at all, the directory is probably not mounted. If it isn't mounted, you need to ask your system administrator to mount it.

Installing or Changing a Regular License



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

- To install MemoryScape software for the first time with a permanent license, begin with the next section.
- To update an existing license, see “*Finding a License Server Host ID*” on page 6.
- To install MemoryScape software and use an existing license, see “*Accessing a License Server*” on page 7.
- To shutdown and restart the license manager, see “*Starting the License Manager Manually*” on page 8.

Planning for a Regular License

MemoryScape uses the FLEXlm® license management software to grant or reject requests to use MemoryScape.



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

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

TotalView Technologies provides tools and HTML documentation for using FLEXlm.

Choosing a License Server

You will need to install the FLEXlm license server the first time you install a regular license. In most cases, the license manager and MemoryScape reside on the same system. However, you can install them on different systems.

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 FLEXlm license manager in your network, you should not include your MemoryScape license with the other licenses managed by that license manager. If you must combine license managers, consult the FLEXlm documentation.

The TCP/IP port number used for the TotalView Technologies license manager daemon must be unique and not be used elsewhere. You can find port numbers that other FLEXlm license managers use in their `license.dat` files.

Finding a License Server Host ID

When you install MemoryScape, the installer placed the files for the FLEXlm 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 the FLEXlm host ID value 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 FLEXlm User Account

While you can run the FLEXlm 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 FLEXlm's use. You may need to refer to your operating system's documentation or your site's operating procedures for infor-

mation on creating this account. The user name does not have to be **flexlm**. 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 3, "Installing License Keys," on page 13.

Accessing a License Server

When you start MemoryScape, it must be able to find the **license.dat** file in the **flexlm-version** directory. If MemoryScape 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."

If you are installing MemoryScape 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-number
USE_SERVER
```

For example:

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

FLEXlm 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 `FLEXlm` 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, you should manually start the license manager and then run `MemoryScape`—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/memscape/bin/memscape
```

`MemoryScape` should respond by displaying its **Add Programs** Screen. 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 8) 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.

Choosing a Standalone FLEXlm Version

TotalView Technologies supplies a stand-alone version of the version FLEXlm license manager. The following table indicates the supported platforms and the `tar` file associated with each.

Distribution Name	FLEXlm license manager for ..
<code>flexlm-version-darwin-power.tar</code>	Apple Mac OS X running on Power
<code>flexlm-version-darwin-x86.tar</code>	Apple Mac OS X running on Intel
<code>flexlm-version-alpha.tar</code>	Compaq Tru64 UNIX

Distribution Name	FLEXlm license manager for ..
<code>flexlm-version-hpux11-ia64.tar</code>	HP HP-UX for IA-64
<code>flexlm-version-linux-ia64.tar</code>	HP Linux for Itanium, Red Hat IA-64 Linux 7.2 and 8.0
<code>flexlm-version-linux-power.tar</code>	IBM Power Linux
<code>flexlm-version-linux-x86.tar</code>	RedHat Linux
<code>flexlm-version-linux-x86-64.tar</code>	RedHat Linux
<code>flexlm-version-irix6-mips.tar</code>	IRIX
<code>flexlm-version-power-darwin.tar</code>	Apple Mac OS X
<code>flexlm-version-RS6000.tar</code>	IBM RS/6000
<code>flexlm-version-solaris-x86.tar</code>	Sun Solaris Opteron
<code>flexlm-version-sun5.tar</code>	Sun SPARC Solaris

Use the `tar` command to extract the files that you downloaded from our web site. For example:

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

Starting the Install Program

Here is the procedure for installing FLEXlm:

- 1 (Optional) Become the root user on the system where you will install MemoryScape:

```
su root
```

We recommend that you become the root user when installing FLEXlm 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 that you name an installation directory. If the directory you name does not exist, the `Install` program creates it. 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 FLEXlm 10.8 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.

- 4 You are then asked which components you wish to install. You should answer *yes* to all questions.
- 5 If you became root to install FLEXlm, use the `exit` command.

More FLEXlm Information

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

User Guide An HTML version of the FLEXlm user manual is installed in `flexlm-version/doc/flexuser`.

Macrovision Web Site
FLEXlm is a product of Macrovision Corporation. Their web site at <http://www.macrovision.com/> contains additional information about FLEXlm as well as utilities that can help you manage your license server.

Installing

License Keys



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

- "Step 1: Locating the FLEXlm License Server Directory" on page 13
- "Step 2: Deleting Older License Keys" on page 14
- "Step 3: Adding New License Keys" on page 15
- "Step 4: Starting and Stopping the License Server" on page 16
- "Step 5: Configuring MemoryScape to Use the License Server" on page 16
- "Reporting Problems with License Installation" on page 17

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

If you want to install MemoryScape and the license server on different machines, you can download the FLEXlm software from <ftp://ftp.totalviewtech.com/toolworks/flexlm/>.

Step 1: Locating the FLEXlm 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 license 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 TotalView Technologies Permanent License Agreement.

If you do not need to remove previous license keys, skip to “Step 3: Adding New License Keys” on page 15.

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 **FLEXlm 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 **FLEXlm 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 MemoryScape.



If your license server is already serving one or more MemoryScape licenses (that is, the file `${FLEXLM}/license.dat` already exists), go to "Revising Your license.dat File" on page 15.

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 MemoryScape 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 TotalView Technologies 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`

Proceed to "Step 4: Starting and Stopping the License Server" on page 16.

Revising Your license.dat File

If you are currently using MemoryScape, 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` does not exist, you will need to follow the procedure described in "Adding a New license.dat File" at the beginning of this topic. Since TotalView Technologies 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 Backup your existing `${FLEXLM}/license.dat` file. For example,

Step 4: Starting and Stopping the License Server

```
cp ${FLEXLM}/license.dat ${FLEXLM}/license.dat.bak
```

2 Using a text editor, edit the `${FLEXLM}/license.dat` file and append the new MemoryScape license keys delivered in this email message to the end of the `${FLEXLM}/license.dat` file.

3 Tell the license server to reread your `license.dat` file:

```
${FLEXLM}/bin/toolworks_lmreread
```

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 MemoryScape to Use the License Server

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

If MemoryScape 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-number  
USE_SERVER
```

Reporting Problems with License Installation

If you have difficulties installing your license keys, please send email to [license@TotalView Technologies.com](mailto:license@TotalViewTechnologies.com). Please include the following:

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

Uninstalling

MemoryScape



The Three-Step Removal Process

If you need to remove or uninstall MemoryScape, the procedure is very straight-forward:

- 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 MemoryScape, you can 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 MemoryScape users will have a `.totalview.memscape` subdirectory. Remove it.

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

The Three-Step Removal Process