

Rational Rose
RealTime
Install Guide

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Contents

Chapter 1	Introduction 1
	Welcome 1
	Release Notes 1
	Getting Started 1
	Install Guide Updates 1
Chapter 2	Installing Rational Rose RealTime on Unix 3
	Upgrade Information 3
	Installation Instructions 4
	Setting Up a User Workstation 6
	Environment Variables 6
	Additional Settings 6
Chapter 3	Installing Rational Rose RealTime on Windows NT 7
	Upgrade Information 7
	Installation instructions 7
	Testing your environment 9
Chapter 4	License Key Information 11
	Installing a Startup License 11
	Installing a Startup License on NT 11
	Installing a Startup License on Unix 11
	Obtaining a Permanent License 12
	Obtaining a Permanent License on Windows NT 12
	Obtaining a Permanent License on Unix 12

Obtaining a Temporary License 15
 Obtaining a Temporary License on Windows NT 15
 Obtaining a Temporary License on Unix 15

Integration With Rational Suites Licensing 17

Troubleshooting 17
 WindowsNT 17
 Unix 18

Chapter 5 Licensing 19

How Licenses Work 19

FLEXlm License Server 20
 FLEXlm Components 20
 License Manager Daemon (lmgrd) 20
 Vendor Daemon 21
 License Key File 21
 Application Program 22
 License Activation Process 22

Licensing on Unix 23

 Running the LMGRD from a Command Prompt 23
 Example 24
 Administration commands 24

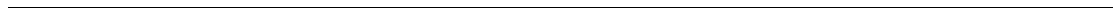
Licensing on NT 25

 Rational Software Client Licensing 25
 Installing a Startup License on a Client System 25
 Configuring Your Client System to Use a Node-Locked License
 26
 Configuring Your Client System to Use a Floating License 26
 Acquiring a Node-Locked Permanent Key for Your Client System
 27

 Rational Software Server Licensing 28
 Installing Rational License Server Software 29
 Configuring the License Server Software 29
 Installing a Startup License Key on a Server System 30
 Acquiring Permanent Floating License Keys for Your Server
 System 31

The License File 34

	Format	34
	Obtaining Licenses	36
Chapter 6	Uninstalling Rational Rose RealTime	37
	Unix	37
	Windows NT	37





Chapter 1

Introduction

Welcome

Welcome to Rational Rose RealTime 6.1.

This guide provides the necessary information to install Rational Rose RealTime in your environment.

Release Notes

See the *Release Notes* for information on system requirements, known limitations, documentation updates, and troubleshooting information.

Getting Started

See the *Getting Started Guide* for instructions on getting started with Rational Rose RealTime.

Install Guide Updates

For the latest documentation updates, please refer to the Rational Rose RealTime website:

www.rational.com/products/rosert



Chapter 2

Installing Rational Rose RealTime on Unix

The procedure for installing Rose RealTime on Unix is described in the following sections. Note that unless specified otherwise, your system administrator will generally carry out these steps.

For environments where there is more than one user of Rose RealTime, we strongly recommend that the main Rose RealTime files be installed on a centralized file server.

A minimum of 150 MB of disk space is recommended to install Rose RealTime.

Upgrade Information

Please ensure past releases of Rational Rose RealTime are removed from your system prior to installation. Please see the section on Uninstall for your specific platform. If you want to run the older release of the product while you are converting the model to the new release, please see the Rose RealTime website for a script to set up your environment for this operation.

www.rational.com/products/rosert

Models created in earlier versions of Rose RealTime can be read directly into 6.1. Rational Rose and ObjecTime Developer models should be converted as per the *Getting Started Guide*. Please do not attempt to bring a workspace forward from 6.0, as it is not compatible with the 6.1 release.

License keys installed with earlier Rose RealTime releases (6.0, 6.0.1, 6.0.2) are not valid for release 6.1.

If you are upgrading Rose RealTime on any of the UNIX platforms, you must do one of the following:

- Manually delete your `~/.registry` directory before you run the new version for the first time
- or
- Add the `"-recreate_registry"` command line option the first time you run the new version.

Installation Instructions

1. Place the Rose RealTime CD in the CD-ROM drive.
2. Mount the CD-ROM device.

You are usually required to be a system administrator (root or super-user) to be able to do this. See the instructions for your particular CD-ROM drive and operating system for details.

HP-UX:

```
mount -rt cdfs /dev/dsk/c201d511 /cdrom
```

Solaris:

```
mount -rF hsfs /dev/sr1 /cdrom
```

where

```
/dev/sr1
```

is the CD-ROM device.

Note: In Solaris the CD-ROM may be automatically mounted.

3. From a shell window, change directory to the mounted CD-ROM device.

For example:

```
cd /cdrom
```

4. Run the setup script.

```
./setup.sh
```

On HP-UX, it may be necessary to use the following command (including the quotes):

```
sh './SETUP.SH;1'
```

5. Review and accept the terms of the license agreement.

The license agreement is displayed and you are prompted to accept or reject the license agreement. You must accept it to continue:

"Enter Y<ENTER> to Accept, R<ENTER> to Read again, or Q<ENTER> to Quit:" Y<ENTER>

6. Specify the platforms to be supported by the Rose RealTime installation.

Select all platforms to be supported by this installation. The default is no and in the example, only SUN5 was selected by typing "Y<ENTER>" at the SUN5 prompt.

```
"Which platforms would you like to be supported?
HP10          Y/N [n]?
SUN5          Y/N [n]? Y<ENTER>
Platforms to be supported:
SUN5"
```

7. Confirm the platform settings.

You are asked to confirm the platforms selected.

Type M <ENTER> to modify platform settings or Y<ENTER> to accept platform settings:" Y<ENTER>

8. Specify the installation directory.

The script prompts you for a directory that it will copy the Rose RealTime files into. The directory name must be specified as an absolute path name. A `roseRT` sub-directory will be created in the directory that you specify. You must have write permissions for the installation directory. If the directory does not exist, you will be asked if you would like to create it.

```
"Enter absolute installation directory path:" /testing<ENTER>
```

9. Confirm the Rose RealTime Packages to Install.

You are asked to confirm the packages and installation directory.

The following 7 packages are selected for installation in the directory `'/home/tester/stevep/RoseRT'`:

(I: Package already installed if 'Y')

Package description	Size	
	in kB	I
=====	=====	=
RoseRT Platform Independent Code	364	N
TargetRTS Common Code (excluding source)	704	N
Solaris TargetRTS libraries	10853	N
Generic On-line Documentation and HELP	13817	N
C++ On-line Documentation and HELP	3	N
RoseRT Unix Platform Independent Code	1387	N
Solaris Toolset binaries	96153	N
=====	=====	=====
Selected size:	123281	kB

```
Free disk space:                2035300 kB
Type M<ENTER> to Modify installation directory path, or
Y<ENTER> to Begin installing the selected packages: Y
```

10. Install License Key.

See “License Key Information” on page 11.

Setting Up a User Workstation

Environment Variables

Rose RealTime requires a number of environment variables to be set. Set the environment variable `$ROSE_HOME` to the new installation directory. Add `$ROSE_HOME/bin` to your path.

These lines can be added to your shell initialization file, so that they are available every time you log on.

Bourne shell (sh or ksh):

```
ROSE_HOME=/disk/apps/Rational/RoseRT
export ROSE_HOME //for hpux10 host replace sun5 with hpux10
ROSE_HOST=sun5
export ROSE_HOST
PATH=$PATH:$ROSE_HOME/bin
export PATH
```

C shell (csh):

```
setenv ROSE_HOME /disk/apps/Rational/RoseRT
setenv ROSE_HOST sun5 //for hpux10 host replace sun5 with
//hpux10
set path=($path $ROSE_HOME/bin)
```

Either logout and then login again, or perform the rest of the upgrade from a new command shell.

Additional Settings

See the *Rose RealTime Toolset Guide* for additional environment variables and startup options.



Chapter 3

Installing Rational Rose RealTime on Windows NT

Note: *If you are installing Rational Suite Development Studio—RealTime Edition, you must install Rational Suite Development Studio first. For more information, see the Rational Suite Installation Guide.*

Upgrade Information

Please ensure past releases of Rational Rose RealTime are removed from your system prior to installation. Please see the section on Uninstall for your specific platform.

Models created in earlier versions of Rose RealTime can be read directly into 6.1. Rational Rose and ObjecTime Developer models should be converted as per the *Getting Started Guide*.

Note: *Do not attempt to load workspaces created in earlier versions of Rose RealTime, as they are not compatible with the new release.*

Installation instructions

Before installing Rose RealTime, ensure that you have a supported system configuration. The system requirements are listed in Chapter 2, Platform and Toolchain Requirements, of the *Rational Rose RealTime Release Notes*. An InstallShield wizard setup program is provided to facilitate installing Rational Rose RealTime on Windows NT. You must have administrator privileges to install this software.

A minimum of 65 MB of disk space is required to install Rose RealTime.

To install Rational Rose RealTime, follow these steps:

1. Load the Rational Rose RealTime CD into your CD-ROM drive.

If the system is configured with the autorun feature enabled, the setup program will run automatically and you may continue with step 3.

2. Run Setup.

Use the Windows Explorer to open a window displaying the contents of the CD-ROM drive. For example, double-click “My Computer” and then double-click the icon for the Rose RealTime CD. Double-click the Setup.exe icon to run Setup.

Note that the .exe file name extension may not be visible.

The Setup dialog appears, followed by the Welcome dialog.

3. Click Next to view the License Agreement.

You must accept the license agreement to proceed.

If you do not agree with the terms of the license agreement, the installation should be aborted. All software and documentation should be returned to Rational Software.

If you accept the terms and conditions of the license agreement, click Yes.

4. Enter your name and the name of your company, and click Next.

5. You are asked if this is a Rational Suite DevelopmentStudio—RealTime Edition Installation.

If you have already installed Rational Suite DevelopmentStudio, click Yes.

If you don't have Rational Suite DevelopmentStudio, click No.

6. Choose the Destination folder and click Next.

7. The default Destination folder where the software will be installed is:

C:\Program Files\Rational\Rose RealTime\6.1

Use the Browse button to change the default destination folder.

Note: Avoid spaces in directory names if you are integrating with Tornado, OSE or VRTX. See *Known Problems and Limitations in the Release Notes for more information.*

8. Choose the Program folder name and click Next. The default Program folder name is Rational Rose RealTime 6.1. This is the folder where Rose RealTime will appear under Start > Programs.

9. An information summary is provided. To edit settings, click Back. To continue, click Next.

Installation begins.

10. When the installation is finished, the Setup Complete dialog appears letting you choose whether to restart your computer. We strongly recommend you click Yes, I want to restart my computer now.
11. Click Finish.
12. Install License Key. See "License Key Information" on page 11.

Testing your environment

Note: *If you just want to construct UML models and not execute them, you needn't read the remainder of this chapter.*

You must have Microsoft Visual C++ 5.0 or 6.0 installed on your system and configured to be run from the DOS prompt to make use of the code generation and execution capabilities of Rose RealTime.

The following instructions will help you to determine whether you have Visual C++ properly installed and configured on your system.

To perform testing on your environment, proceed as follows:

1. Open a Windows NT command prompt from the Windows Start menu as follows:
Start > Programs > Command Prompt.
2. Type `nmake` then hit Enter.
3. Type `cl` then hit Enter.

If your environment is correct, then these two applications should report errors similar to the ones below:

```
Command Prompt
Microsoft © Windows NT ™
© Copyright 1985-1996 Microsoft Corp.

C:\>nmake

Microsoft © Program Maintenance Utility Version 6.00.8168.0
Copyright © Microsoft Corp 1988-1998. All rights reserved.

NMAKE = fatal error B1864: MAKEFILE not found and no target
specified
Stop.

C:\>cl
```

```
Microsoft © 32-bit C/C++ Optimizing Compiler Version 12.00.8168  
for 80x86  
Copyright © Microsoft Corp 1984-1998. All rights reserved.
```

```
Usage = cl { option... } filename... { /link linkoption... }
```

If your environment is NOT properly configured, then you will see an error similar to this one:

Command Prompt

```
C:\> nmake
```

```
The name specified is not recognized as an internal or external  
command, operable program or batch file.
```

Note: *If you get this error message, your compiler environment setup is improperly installed. Please contact your System Administrator to verify.*



Chapter 4

License Key Information

Installing a Startup License

The startup license keys are time-limited and allow you to start using Rose RealTime immediately.

Installing a Startup License on NT

See the Rational License Key Administrator online help.

Installing a Startup License on Unix

To install a startup license on Unix, follow these steps:

1. Go to the \$ROSE_HOME/bin directory.
2. Type **RoseRT -startuplicense**.

The Startup License Key Administration form appears (see Figure 1.)

Figure 1 Startup License Key Administration form

Startup License Key Administration

License type: Node Locked: Floating Host name: beef

Quantity: 1

Expiry date: 12/21/99

License key:

OK Cancel

3. Locate the Startup License Key certificate that accompanied your product shipment, which is in an envelope. Your company's name is printed on the certificate and shows through the envelope window.
4. Based on the license type and product name indicated on this certificate, copy the appropriate information into the Startup License Key Administration form and click OK.

Note: A floating license requires you to start the license server. See "Licensing" on page 19.

Your startup license is created. Remember that your Startup license will expire on the date you entered in the form.

Now you are ready to start Rose RealTime.

To get a guided introduction to the primary tools and concepts for constructing and executing real-time models in Rational Rose RealTime:

1. Start Rational Rose RealTime.
2. Select Help > Contents.
3. Click Tour Rose RealTime.

To start building and running a model, click Quickstart Tutorial.

Obtaining a Permanent License

Obtaining a Permanent License on Windows NT

See the Rational License Key Administrator online help.

Obtaining a Permanent License on Unix

To obtain a permanent license, follow these steps:

1. Go to the \$ROSERT_HOME/bin directory.
2. Type **RoseRT -license**.

The License Key Administration form appears (see Figure 2).

Figure 2 License Key Administration form

3. Completely fill in the form—making sure you **do not** click the Temporary license checkbox—and click Save Form...

You may optionally use the workstation disk id (DISK_SERIAL_NUM) or the network address of the network interface card installed on your system to identify your workstation.

If your workstation is configured with two network adaptors, you may select either address to identify your platform for licensing purposes.

- For nodelocked licenses, make sure you click NodeLocked as the License type.

- For Floating licenses, you will be required to enter server information for the platform which will be running as the Rose RealTime license server. In order to include this information in the request for the permanent license, you can install Rose RealTime on the server and run the license administrator following the standard instructions, or alternatively run the license utility to provide you with the necessary information.
 - On UNIX — from a workstation with Rose RealTime installed on it, copy the file `$ROSERT_HOME/bin/<arch>/lmhostid` onto the server (where `<arch>` is `sun5` or `hpux10`, depending upon what architecture Rose RealTime was installed on). Run the `lmhostid` utility on the server and record the hostid for the license server which will be included in the license request. Either enter that information in the Host ID field of the license administrator if you are running the administrator locally, or copy the information into the license file request and send the email as per the instructions.
 - You must install a copy of the **license.dat** file locally on each workstation that will be running Rose RealTime. Place the file in the **\$ROSERT_HOME/license/license.dat** directory. As well, you must run the license daemon on the license server. See “Licensing on Unix” on page 23.
- 4. Copy the contents of the file saved in Step 3 into the body of a standard email.

Note: Do not add any information to this text. Include only the contents of the file saved in Step 3.

- 5. Email the request to `auto-licensing@rational.com`.

Note: Do not attach the file to the email. It will not be accepted by the automated license key generation utility.

You will receive a new `license.txt` file via email.

Note: Do not follow the instructions in the email.

- 6. Backup your existing `$ROSERT_HOME/license/license.dat` file and save the newly received text file as `license.dat`.

Note: You have to change the file extension from `.txt` to `.dat`.

- 7. Restart you local toolset session as appropriate.

Obtaining a Temporary License

In some situations—such as, if you are evaluating Rose RealTime—you may need to obtain a temporary license. If you need to obtain a temporary license, follow the procedure below.

Obtaining a Temporary License on Windows NT

See the Rational License Key Administrator online help.

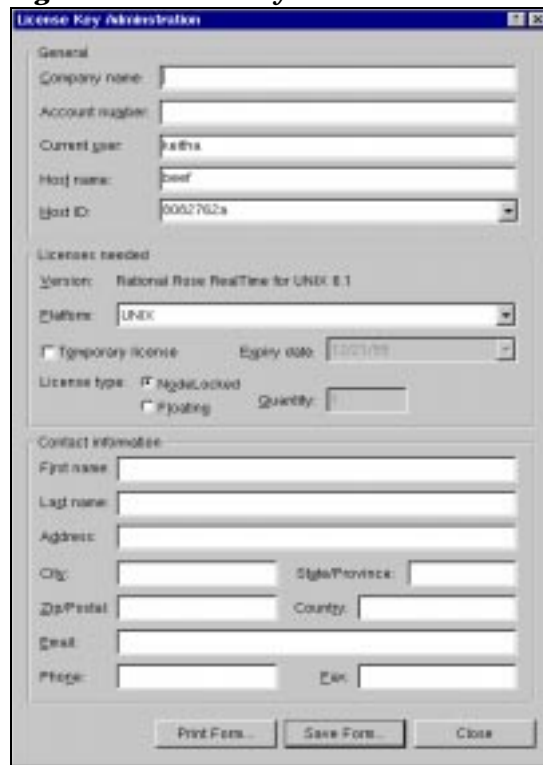
Obtaining a Temporary License on Unix

To obtain a temporary license, follow these steps:

1. Go to the \$ROSERT_HOME/bin directory.
2. Type **RoseRT -license**.

The License Key Administration form appears (see Figure 3).

Figure 3 License Key Administration form



The screenshot shows a window titled "License Key Administration" with the following fields and options:

- General:**
 - Company name: [text box]
 - Account number: [text box]
 - Current gear:
 - Host name:
 - Host ID:
- Licenses needed:**
 - Version: Rational Rose RealTime for UNIX 8.1
 - Platform:
 - Temporary license Expiry date:
 - License type: NodeLocked Floating Quantity:
- Contact information:**
 - First name: [text box]
 - Last name: [text box]
 - Address: [text box]
 - City: [text box] State/Province: [text box]
 - Zip/Postal: [text box] Country: [text box]
 - E-mail: [text box]
 - Phone: [text box] Fax: [text box]

Buttons at the bottom: Print Form..., Save Form..., Close

3. Completely fill in the form—making sure you click the Temporary license checkbox—and click Save Form...

You may optionally use the workstation disk id (DISK_SERIAL_NUM) or the network address of the network interface card installed on your system to identify your workstation.

If your workstation is configured with two network adaptors, you may select either address to identify your platform for licensing purposes.

- For nodelocked licenses, make sure you click NodeLocked as the License type.
 - For Floating licenses, you will be required to enter server information for the platform which will be running as the Rose RealTime license server. In order to include this information in the request for the permanent license, you can install Rose RealTime on the server and run the license administrator following the standard instructions, or alternatively run the license utility to provide you with the necessary information.
 - On UNIX — from a workstation with Rose RealTime installed on it, copy the file `$ROSERT_HOME/bin/<arch>/lmhostid` onto the server (where <arch> is sun5 or hpux10, depending upon what architecture Rose RealTime was installed on). Run the `lmhostid` utility on the server and record the hostid for the license server which will be included in the license request. Either enter that information in the Host ID field of the license administrator if you are running the administrator locally, or copy the information into the license file request and send the email as per the instructions.
 - You must install a copy of the **license.dat** file locally on each workstation that will be running Rose RealTime. Place the file in the **\$ROSERT_HOME/license/license.dat** directory. As well, you must run the license daemon on the license server. See “Licensing on Unix” on page 23.
4. Copy the contents of the file saved in Step 3 into the body of a standard email.

Note: Do not add any information to this text. Include only the contents of the file saved in Step 3.

5. Email the request to `auto-licensing@rational.com`.

Note: Do not attach the file to the email. It will not be accepted by the automated license key generation utility.

You will receive a new license.txt file via email.

Note: Do not follow the instructions in the email.

6. Backup your existing \$ROSERT_HOME/license/license.dat file and save the newly received text file as license.dat.

Note: You have to change the file extension from .txt to .dat.

7. Restart you local toolset session as appropriate.

Integration With Rational Suites Licensing

If you are using other Rational products along with Rose RealTime, the license.upd file that you receive from Rational in response to a license request will contain the keys for all the Rational products. If you are using floating licenses, you will already be using the FlexLM lmgrd daemon and the rational vendor daemon.

The only assumption that Rose RealTime makes is that the ROSERT_LICENSE_FILE variable points to a valid FlexLM license file that contains a valid Rose RealTime license. Simply follow the instructions provided; the existence of the additional license keys will not cause any problems.

For floating licenses, keep in mind that only one instance of the rational daemon can be executed at any given time. Your project's license administrator should ensure that only one instance of the rational command exists and/or all paths are set correctly so that only one instance of the rational command is used.

Troubleshooting

WindowsNT

See the Rational License Key Administrator online help.

Unix

Problem 1

If a FlexLM License Manager dialog appears indicating that “Your application was unable to obtain a license because...”,

1. Select Cancel.
You will get a Rose RealTime message stating “Unable to obtain a license”.
2. Select OK.
3. Verify the location (**\$ROSERT_HOME/license/license.dat**) of the **license.dat** file and the spelling of the file name.
4. If both the name and location are correct, verify that the install process has set the **ROSERT_LICENSE_FILE** environment variable to the location of the file. This variable points to the **license.dat** file, not just the directory in which it is located.

To verify that the environment variable is correctly set, type **echo \$ROSERT_LICENSE_FILE** at a command prompt.

If the environment variable is not set or set incorrectly, add or modify as appropriate.

Problem 2

If you receive an “Unable to obtain a license message” message after the splash screen is displayed, check the expiration date of your license.

Problem 3

If you have received a floating license file and are unable to obtain a license, verify that the license daemon is running. See the “Licensing” on page 19.



Chapter 5

Licensing

The following topics are covered in this chapter:

- How Licenses Work
- FLEXlm License Server
- Licensing on Unix
- Licensing on NT
- The License File
- Obtaining Licenses

When you buy Rose RealTime, you purchase some number of node-locked and/or floating licenses. A node-locked license allows you to use Rose RealTime on a specific workstation. Floating licenses allow anyone on your network to use Rose RealTime as long as a floating license is available. Thus, the number of licenses that you purchase determines the maximum number of users who can use Rose RealTime simultaneously.

For example, if you purchased five licenses and three users are currently using Rose RealTime, then two more users can use Rose RealTime.

How Licenses Work

Licenses are controlled by a license manager FLEXlm (software delivered as part of Rose RealTime) that runs on a license server (one of your workstations or a dedicated machine depending on configuration and license types purchased). The license manager monitors license access.

When you start Rose RealTime, you are initially unlicensed. If a license is available, the license manager gives you a license. You retain the license as long as you are using Rose RealTime. When you exit Rose RealTime, your license is returned to the license manager and becomes available for another user.

If no license is available, you are unable to use Rose RealTime until a license is returned by another user. An “Unable to obtain a license” message is displayed.

Note: *The inability to obtain a license may also be caused by a corrupted license file, a change to the host id (network card, ip address) or a hard drive replacement when a node-locked license is used on NT. Please ensure you are able to communicate with the license server through a simple ping command. See “Obtaining Licenses” on page 36 for more information.*

FLEXlm License Server

The following sections provide information about the FLEXlm license server, including descriptions of the license daemons running on the server systems.

FLEXlm Components

The FLEXlm license configuration includes these major components, which are described in the following sections:

- License manager daemon
- Vendor daemon
- License key file
- Application program

License Manager Daemon (lmgrd)

The *license manager daemon* (lmgrd) handles the initial contact with the client application programs, passing the connection on to the appropriate vendor daemon. It also starts, stops, and restarts the vendor daemons.

Vendor Daemon

In FLEXlm, licenses are granted by running processes. There is one process for each vendor who has a FLEXlm-licensed product on the network. This process is called the *vendor daemon*. The vendor daemon keeps track of how many licenses are checked out, and who has them. If the vendor daemon terminates for any reason, all users lose their licenses. (This does not mean the applications suddenly stop running. Users can save their work and exit safely.) Users normally regain their license automatically when lmgrd restarts the vendor daemon, although the applications may exit if the vendor daemon remains unavailable.

Client programs communicate with the vendor daemon, usually through TCP/IP network communications. The client application and the daemon processes (the license server) can run on separate nodes on your network, across any size wide-area network. Also, the format of the traffic between the client and the vendor daemon is machine independent, allowing for heterogeneous networks. This means the license server and the computer running an application can be different hardware platforms or even different operating systems (for example, Windows NT as a server system and Unix as a client or Unix as a server and Windows NT as a client).

License Key File

Licensing data is stored in a text file called the *license key file*. The license key file is created by the software vendor and is edited and installed by the License Key Administrator. It contains information about the server nodes and vendor daemons, and at least one line of data (called FEATURE or INCREMENT lines) for each licensed product. Each FEATURE line contains a license key based on the data in that line, the *hostids* specified in the SERVER lines, and other vendor specific data.

In some environments, you can combine the licensing information for several vendors into a single license key file. The FLEXlm default location is:

```
<Install Path>\license.dat (Windows 2000, Windows NT)
/usr/local/flexlm/licenses/license.dat (Unix)
```

See Table 1, "License Key Files.," on page 33 for details about the files used by Rational.

If your site has software from multiple vendors with incompatible license key files (due to different sets of servers), you should manage these activities with multiple server processes. See “Multiple License Server Processes” on page 163 for details about setting up multiple server processes on your license server system.

You will not typically need to set the `LM_LICENSE_FILE` variable in order to use Rational software products. We strongly recommend that you keep a copy of the license key file in the vendor’s ‘default’ location, or that users do not need to set `LM_LICENSE_FILE` to run their applications. The `LM_LICENSE_FILE` variable is used on UNIX systems and on systems with multiple license key files. On Windows systems, set the variable `LM_LICENSE_FILE` in the Environment tab of the System control panel.

Application Program

The application program using FLEXlm is linked with the program module (called the FLEXlm client library) that provides communication with the license server. On Windows, this module is called `LMGRxxx.DLL`, where `xxx` indicates the FLEXlm version. During execution, the application program communicates with the vendor daemon to request a license.

License Activation Process

When you run a ‘counted’ FLEXlm-licensed application, such as a Rational Suite product that uses a floating license, the following occurs:

1. The license module in the client application finds the license key file, which includes the host name of the license server node and port number of the license manager daemon, `lmgrd`.
2. The client establishes a connection with the license manager daemon (`lmgrd`) and specifies the appropriate vendor daemon.
3. `lmgrd` determines which machine and port correspond to the master vendor daemon and returns that information to the client.
4. The client establishes a connection with the specified vendor daemon and sends its license request.
5. The vendor daemon checks in its memory to see if any licenses are available and sends a grant or denial back to the client.

6. The license module in the application grants or denies use of the feature, as appropriate.

'Uncounted' features, where the number of licenses is '0' (zero), do not require a server and the FLEXlm client library routines in the application grant or deny usage based solely upon the license contents. Node-locked licenses, for example, set the license number to 0 (zero).

Licensing on Unix

Running the LMGRD from a Command Prompt

From a command prompt execute:

```
lmgrd -c <licenseFileList> -l <logfile>
```

Note: *lmgrd* can be found in `$ROSERT_HOME/bin/<arch>`, where `<arch>` is the host that Rose RealTime is installed on (*sun5* or *hpux10*).

- **licenseFileList** is the path to the license file or a list of license files. If the FLEXlm daemon is only being used to provide Rose RealTime licenses, use `-c $ROSERT_LICENSE_FILE`. Otherwise, include the `$ROSERT_LICENSE_FILE` environment variable in a semicolon (";") separated list.
- **logfile** is the path to a log file. `$ROSERT_HOME/license/log` is recommended if *lmgrd* is only providing Rose RealTime licenses.

For convenience, you will probably want to augment a system initialization script on your license server to automatically start the license daemon each time the license server boots.

The names, locations, organization, and contents of system initialization scripts varies from Unix system to Unix system. You might begin by looking at the following files:

- HP-UX: `/sbin/init.d/SlmRational.sh`
- Solaris: `/etc/rc2.d/SlmRational.sh`

To verify that your license manager is operational, you can enter these commands on your license server to see if its daemons are running:

```
% ps axw | grep -v grep | egrep "lmgrd|rational"
```

or

```
% ps -e | grep -v grep | egrep "lmgrd|rational"
```

Example

```
setenv ROSERT_LICENSE_FILE /apps/licenses/rrt6.0/license.dat  
lmgrd -c $ROSERT_LICENSE_FILE -l /apps/logs/logRRT
```

or

```
lmgrd -c $ROSERT_LICENSE_FILE;$LM_LICENSE_FILE -l  
/apps/logs/current_log
```

Administration commands

The license manager supports several system-administration commands.

Command	Description
lmdiag	Allows you to diagnose problems when you cannot checkout a license.
lmdown	Shuts down license and vendor daemons
lmhostid	Reports license manager host ID of workstation
lmremove	Returns specific licenses to license pool (for example, after a workstation crashes)
lmreread	Rereads license file, starts new vendor daemons
lmstat	Reports status on daemons and feature usage
exinstal	Reports on licenses in license file you specify on the command line.

Note: These commands can be found in `$ROSERT_HOME/bin/<arch>`, where `<arch>` is the host that Rose RealTime is installed on (`sun5` or `hpux10`).

Licensing on NT

Rational Software Client Licensing

This section describes the following topics related to Rational software licensing services:

- Installing and configuring Rational Software node-locked license keys on a client system
- Installing or changing license keys after installing Rational software

If your system administrator has configured your license keys on your system, you can immediately start using your Rational software product.

Rational supports both node-locked and floating licenses. Node-locked licenses are restricted to an individual system. Floating licenses can be shared by multiple users, with one person using a license at a time.

The online help in the Rational License Key Administrator describes how to use the Rational License Key Administrator to review and modify your license configuration.

The Rational License Key Administrator online help is available by clicking **Help** in the License Key Administrator program or by opening `<Install Path>\Rational\Common\licadmin.hlp`.

Installing a Startup License on a Client System

After you install Rose RealTime, you may install a startup license, allowing you to use Rose RealTime until you obtain your permanent license key. The startup license key information is included with your software kit. The license key expiration date is noted on the license key certificate.

You can request permanent licenses keys, if available. The date that your permanent license key is available is noted on your startup license key certificate. You can request the permanent key as soon as it is available, regardless of whether you have installed a startup key.

In order to maintain uninterrupted use of your software, make sure you obtain and install your permanent license key before your startup license key expires.

To Install a Node-locked Startup License Key on a Client System

1. Using your product's Windows Start menu, find and run the License Key Administrator. The Rational License Key Administrator is located in the program group for the program you have installed (for example, Rational Suite Development Studio or FlexLM server).
2. On the License Key(s) tab, click on Enter a License Key.
3. On the first wizard page, select Startup License Key.
4. On the second wizard page, select Node-Locked License Key.
5. On the wizard screen, provide the information in the fields based on the columns on the Startup License Key Certificate.

You must enter the information exactly as presented or the key will not work. If you enter incorrect or incomplete information, the License Key Administrator reports the following message:

```
There is an error in the license key as it was entered.  
Please check your entries for a possible typo.
```

Review and correct the information in each of the fields.

6. Click Finish.

After you complete this step, the License Key Administrator displays the startup license key on the License Key(s) tab.

Configuring Your Client System to Use a Node-Locked License

If you are using a node-locked license, you do not need to set up or connect to a license server system; you simply install your license keys on your client system. The Rational License Key Administrator online help describes the license installation process.

Configuring Your Client System to Use a Floating License

Before configuring your system to use a floating license, you must obtain the name of your license server system from your system administrator. (If you are the system administrator, see "Rational Software Server Licensing" on page 31 for information about setting up server-based floating licenses.)

1. Ensure that the FLEXlm license server software is running on the license server system. Contact your system administrator or see "Installing Rational License Server Software" on page 32.
2. Start the Rational License Key Administrator on the client system.

3. Click the Settings tab.
4. Select the Use Single Server check box and specify the name of the FLEXlm license server system.
5. Click Exit to exit from the Rational License Key Administrator.

Acquiring a Node-Locked Permanent Key for Your Client System

This section summarizes the steps you follow to submit your request.

The Rational License Key Administrator online help provides instructions for preparing, sending, and receiving license key requests, and installing license key files.

You must have an Internet connection to request license keys electronically with the Rational License Key Administrator.

1. Use the License Key Administrator to prepare the license request.
2. Send the request to Rational. You may send the request to Rational electronically using the Rational License Key Administrator, by printing and faxing the request, or by printing the request and making your request by telephone.

When you create a license key request, the request is sent to Rational electronically by default. To print or fax a license key request, clear the Send all request to Rational immediately check box.

Notes

Review the online help before requesting permanent licenses.

The online help describes the steps for any additional tasks. For example, the online help describes the steps needed to prepare license key requests for multiple systems and submitting those requests from a different system.

Make sure that the contact and account information is correct. The Rational License Key Administrator will identify any fields that are missing required information.

If you request a new license electronically, Rational will send you a license key via e-mail. If you request a license by fax and have specified an e-mail address in your contact information, you will receive a license key file via e-mail.

If your system is not connected to the Internet, you can request license keys from another system with an Internet connect. See the License Key Administrator online Help for details about requesting license keys via proxy.

Rational Software Server Licensing

This section describes the following topics related to Rational software licensing services:

- Installing Rational Software license management software
- Installing and configuring license keys on a server system
- Installing or changing license keys after installing Rational software
- Special procedures and restrictions

The information in this section is intended for system administrators or users who manage licenses.

If you are using node-locked licenses on a client system, you can skip this chapter. See “Rational Software Client Licensing” on page 27 for information about setting up node-locked licenses on a client system.

The online help in the Rational License Key Administrator describes how to use the Rational License Key Administrator to review and modify your license configuration. The online help also provides information about configuring the FLEXlm License Server software.

The Rational License Key Administrator online help is available by clicking Help in the License Key Administrator program or by opening <Install Path>\Rational\Common\licadmin.hlp.

Four steps are required to use floating licenses. These steps are described in the following sections:

1. Install the FLEXlm license server software on the license server system. See FLEXlm License Server Installation on page 41 for additional information.
2. Configure the license server software.
3. Install the floating license keys on the license server system.
4. Configure the client to use license keys from the server.

Installing Rational License Server Software

“The License File” on page 34 describes the installation procedure for the FLEXlm license server software

Configuring the License Server Software

After installing the FLEXlm License Server software, you must provide the following additional information about your configuration. You can use the FLEXlm License Manager to configure:

- Location of the license key file. (Rational recommends that you keep a copy of the license in the location where the application expects it.)
- Location of licensing executables.
- Location of log files. The debug log files can be used to diagnose configuration problems and daemon software errors.

To Configure the License Server Software

Use the following steps to configure your FLEXlm license server software:

1. Click Start and choose Settings > Control Panel.
2. Open the FLEXlm License Manager control panel.
3. Click the Setup tab. Enter the location of the lmgrd.exe file.
The default location is <Install Path>\Program Files\Rational\Common\.
4. Enter the location of the license key file on your licenser server computer. Specify either `rational_server_perm.dat`, the permanent license key file, or `rational_server_temp.dat`, the startup license key file. The default location is <Install Path>\Program Files\Rational\Common\.
5. Enter the location of the license debug log file. The default location is <Install Path>\Program Files\Rational\Common\.
6. Select the Use NT Services check box if you want to start the FLEXlm License Server software as a Windows NT service.
If you select the Use NT Services check box, you may also select the Start Server at Power Up check box. If you do not select the Start Server at Power Up check box, you must start the FLEXlm License Server manually each time you start your computer.

We recommend that you select both check boxes to start your license server as a Windows NT service automatically each time you boot your system.

To start the FLEXlm License Server manually, on the Control tab of the FLEXlm License Manager control panel, click the Start button.

7. Click OK to save this information and exit.

To Start the FLEXlm License Server Software

Use the following steps to start your license server software:

1. Open the FLEXlm License Manager control panel.
2. On the Control tab, click the Start button to start the license server.
3. Click the Status button to confirm that the license server started.

Installing a Startup License Key on a Server System

You may install a startup license key, letting client systems use floating licenses from the server to use Rose RealTime until you get your permanent license keys.

You can request permanent license keys, if available. Your startup license key certificate indicates the date that your permanent license key is available. You may request the permanent key as soon as it is available, regardless of whether you have installed a startup key.

Review the information on Startup License Key Certificate, included with your software media kit. Your startup license key certificate indicates the startup license key expiration date.

To Install a Startup License Key on a Server System

1. From the Windows Start menu, select Programs > Rational License Key Administrator.
2. On the License Key(s) tab, click the Enter a License Key button.
3. On the first wizard page, select Startup License Key.
4. On the next wizard page, select Floating License Key.
5. On the third wizard page, provide the information in the fields, based on the columns on the startup license key certificate. You must enter the information exactly as presented or the key will not work.
6. Click Finish.

After you complete this step, the License Key Administrator creates a file containing a startup license and displays the startup license key on the License Key(s) tab.

Acquiring Permanent Floating License Keys for Your Server System

You can use the Rational License Administrator to request changes to your license key configuration. For example, you can move license keys from one server to another or specify a new license contact.

The Rational License Key Administrator online help provides instructions for preparing, sending, and receiving license key requests, and installing license key files.

You must have an Internet connection to request license keys electronically with the Rational License Key Administrator.

1. Use the License Key Administrator to prepare the license request.
2. Send the request to Rational. You may send the request to Rational electronically using the Rational License Key Administrator, by printing and faxing the request, or by printing the request and making your request by telephone.

When you create a license key request, the request is sent to Rational electronically by default. To print or fax a license key request, clear the **Send all request to Rational immediately** check box.

Notes

Review the online help before requesting permanent licenses.

The online help describes the steps for any additional tasks. For example, the online help describes the steps needed to prepare license key requests for multiple systems and submitting those requests from a different system.

Make sure that the contact and account information is correct. The Rational License Key Administrator will identify any fields that are missing required information.

If you request a new license electronically, Rational will send you a license key via e-mail. If you request a license by fax and have specified an e-mail address in your contact information, you will receive a license key file via e-mail.

If your system is not connected to the Internet, you can request license keys from another system with an Internet connect. See the License Key Administrator online Help for details about requesting license keys via proxy.

Redundant License Server Systems

You can configure your licensing environment to use up to three license server systems to ensure availability of license keys.

See the License Key Administrator online Help for information about setting up redundant license servers.

Table 1 License Key Files.

File Name	Description	Notes
rational_temp.dat	Contains all client node-locked startup license keys.	You must obtain a permanent license key to continue to use your Rational software product past the startup key expiration date.
rational_perm.dat	Contains all client node-locked permanent license keys.	Run the License Key Administrator program on your client system to request new permanent keys.
rational_redirect.dat	Used on a client to specify the name of the license server system that manages floating licenses.	This file is initially empty. The Rational License Key Administrator updates this file with the name of your license server when you select server-based licensing.
rational_server_temp.dat	Contains all startup server license keys on a license server.	You must obtain a permanent license key to continue to use your Rational software product.
rational_server_perm.dat	Contains all permanent server license keys on a license server.	Run the License Key Administrator program on your license server system to request new permanent license keys.

The License File

The FLEXlm license files are the same format for Unix and NT.

The default NT Rose RealTime license file is

```
%ROBERT_HOME%\license\license.dat
```

The default Unix Rose RealTime license file is

```
$ROBERT_HOME/license/license.dat
```

When users start Rose RealTime, the startup script automatically defines the environment variable `ROBERT_LICENSE_FILE` for them.

However, as you install Rational products, you can merge the Rational license data into another license file that you have already set up for another product, as long as you change the `ROBERT_LICENSE_FILE` environment variable to point to the new file.

FLEXlm uses this variable to locate the license file.

Format

The license file is a text file that you can edit with any text editor. Your license file will contain lines similar to:

```
SERVER garcon 1874350 1706
DAEMON rational
FBE669014E142A4CF37 " "
```

In general, one or three server lines are followed by one or more vendor daemon lines, which are followed by one or more feature lines. Rose RealTime requires only one of each, but your license file may include data for other products, too.

Each server line contains, in order, the:

- Keyword `SERVER`
- Host name of the license server, from `hostname`
- License manager host ID of the license server, from `lmhostid`
- TCP port number to use

Each vendor daemon line contains, in order, the:

- Keyword `DAEMON`
- Name of the vendor daemon (always `rational` for Rose RealTime)

- Pathname to the directory that contains the executable code for this daemon
- Pathname to your options files for this daemon (optional - see the “Options” section below)

Each feature line contains, in order, the:

- Keyword FEATURE
- Name of the feature
- Name of the vendor daemon, previously defined on a DAEMON line, that serves this feature (always rational for Rational products)
- Latest (highest numbered) version of this feature that is supported (5.000) for the current release of Rose RealTime)
- Expiration date. This is specified as dd-mmm-yy or as dd-mmm-yyyy, where yy is the last 2 digits of the year and yyyy is the unabbreviated year. You must specify 4 digits for the year 2000 and beyond. You must specify '00' to indicate a license which does not expire.
- Number of licenses
- Encryption code (obtained from Rational for Rose RealTime)
- Vendor string, enclosed in double quotes, contains node-locked information when licensing Rose RealTime as node-locked
- License manager host ID, supplied only when this feature is bound to a specific host, that is, node-locked

Note: *You cannot combine floating and node-locked licenses for the same product in a single license file.*

The tokens on each line can be separated by any amount of white space (spaces or tabs). You can edit only four kinds of tokens in the license file:

- Host names on SERVER lines
- TCP port numbers on SERVER lines
- Pathnames to vendor daemons on DAEMON lines
- Pathnames to options files on DAEMON lines

All other tokens are included as input to the encryption algorithm that produces the encryption codes on the FEATURE lines.

Note: A *DEMO FEATURE Line* (includes “*DEMO*” at the end of the *FEATURE Line*) is a special temporary license which does not require running *lmgrd* or *start_lm*. Licensing is activated when the *DEMO FEATURE Line* is placed in the license file.

Obtaining Licenses

For information on license keys please refer to the Installation Instructions and License Certificate that accompany the product shipment. If either of these two documents is missing, please contact your local Rational office for replacement information.



Chapter 6

Uninstalling Rational Rose RealTime

Unix

To uninstall Rose RealTime, follow these steps:

1. Save any user data files in another location before removing the installation directory.
2. Remove the installation directory and all of its contents.

Windows NT

To uninstall Rose RealTime, follow these steps:

1. Check the permissions of the `%ROSET_HOME%\license\license.dat` file. If the temporary license file was still on your system and was set to read-only, the license directory must be removed manually.
2. From the Start menu, select Programs > Rational Rose RealTime 6.1 > Uninstall Rational Rose RealTime 6.1.

All directory items and registry settings are removed from your system.

If the temporary license file was still on your system and was set to read-only, the license directory must be removed manually.

