

Installing Rose

Rational Rose

VERSION: 2002.05.00

PART NUMBER: 800-025344-000

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Rational®
the e-development company™

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Preface

Rational Rose for UNIX/Linux[®], hereafter referred to as Rose, is a comprehensive, integrated programming environment that supports the development of complex software systems. This manual explains how to install Rose on UNIX/Linux platforms.

Audience

This manual is intended for:

- Anyone who installs Rose

This manual assumes you have a general understanding of the UNIX/Linux operating system and X Window System environment on the platform on which you will install Rose. You will need help from your system administrator, or experience in UNIX system administration, and the ability to log in as root to do some of the installation steps.

Other Resources

- Online Help is available for Rational Rose.
- All manuals are available online, either in HTML or PDF format. The online manuals are on the Rational Solutions for Windows Online Documentation CD.
- For more information on training opportunities, see the Rational University Web site at <http://www.rational.com/university>.

Contacting Rational Technical Publications

To send feedback about documentation for Rational products, please send e-mail to techpubs@rational.com.

Contacting Rational Technical Support

Contact Rational Customer Support if you have questions about installing, using, or maintaining this Rational Software product. The following table describes how to contact Rational Customer Support.

Your Location	Telephone	Facsimile	E-mail
North America	(800) 433-5444 (toll free) (408) 863-4000 Cupertino, CA	((781) 676-2460 Lexington, MA	support@rational.com
Europe, Middle East, Africa	+31 (0) 20-4546-202 Netherlands	+31 (0) 20-4545-201 Netherlands	support@europe.rational.com
Asia Pacific	+61-2-9419-0111 Australia	+61-2-9419-0123 Australia	support@apac.rational.com

For up-to-date contact numbers and addresses visit the support contacts web page at <http://www.rational.com/support/contact>.

Note: When you contact Rational Technical Support, please be prepared to supply the following information:

- Your name, telephone number, and company name
- Your computer's make and model
- Your operating system and version number
- Product release number and serial number
- Your case ID number (if you are following up on a previously-reported problem)

Contacting Rational Licensing Technical Support

If you have questions about acquiring license keys for your Rational Software products, contact Rational Licensing Support as follows:

Your Location	Telephone	Facsimile	E-mail
Asia Pacific	+61-2-9419-0111	+61-2-9419-0123	license@apac.rational.com
Asia Pacific (Japan)	+61-2-9419-0111	+61-2-9419-0123	license@japan.rational.com
Asia Pacific (Korea)	+82-2-556-9420	+82-2-556-9426	license@apac.rational.com
Asia Pacific (Mainland China, Hong Kong, and Taiwan)	+61-2-9419-0111	+61-2-9419-0123	license@china.rational.com
Europe Middle East Africa	+31 20 4546 200	+31 20 4546 202	license@europe.rational.com
North American (East Coast) South America	800-433-5444 (toll free)	781-676-2460	license@rational.com
North America (West Coast) Central America	800-433-5444 (toll free)	408-863-4001	license@rational.com

This chapter details how to install Rational Rose for UNIX/Linux from the distribution media.

The following topics are covered in this section:

- *Overview* on page 1
- *Before Starting* on page 2
- *Upgrading from a Previous Release* on page 2
- *Typical Installation* on page 2
- *Installing and Licensing Rose for UNIX/Linux* on page 3
- *Removing Previously Installed Releases* on page 10

Overview

This document provides you with the following information:

- An overview of the installation procedures.
- Software licensing description and procedures. See *Administering Licenses* on page 41.
- Information needed to perform a typical installation of the product.
- Support information, including references to additional sources of information for Rational software and licensing. See the *Preface* on page vii for this information.

On-line documentation is available in either PDF or HTML formats. Adobe Acrobat® Reader is required to view PDF files; a Web browser is required for HTML documents. The installation tool will install Adobe Acrobat Reader and Netscape Navigator.

A copy of the Adobe Acrobat Reader is available on the Rational Rose for UNIX/Linux CD in the **extras/acrobat** directory. A copy of Netscape Navigator is available in the **extras/netscape** directory on the Rational Rose for UNIX/Linux CD.

Before Starting

To install Rose for UNIX/Linux you will need a UNIX workstation running either Solaris 2.5.1, 2.6, 7, or 8, HP-UX 10.20, 11.00, or 11.11, SGI IRIX 6.5.5, AIX 4.3.2, Tru64 Unix 4.0f, or Linux x86 Red Hat 6.2 or 7.0.

Note: All platforms may not be available at this time. Contact technical support for availability information.

Before starting the installation, you need:

- Installation instructions including this manual and the current release notes
- The distribution media, which contains the software and on-line help for the current release
- A general understanding of your UNIX operating system and the X Window System environment
- UNIX system administration ability to log in as **root** for some of the installation steps

Note: Additional hardware and software requirements are discussed in *Prerequisites* on page 13.

Upgrading from a Previous Release

There are no known problems associated with upgrading from a previous release to this release of Rose for UNIX/Linux.

Before running this version of Rose, there are several actions that must be taken. These are described in *Initial Runtime Instructions When Upgrading* on page 37.

Typical Installation

The following list gives a brief outline of what takes place during a “typical” installation.

- Install the Rose components (**rs_install**). This will also install FLEXlm licensing support.
- Install startup license keys as part of the install. See the license certificate that comes with the media kit.

- Check that licensing is working by starting Rose.
- Request permanent licenses, install them (**license_setup**), and then test that licensing is working.

Installing and Licensing Rose for UNIX/Linux

The following sections provide a summary of the steps you take when installing Rational software products and the FLEXlm license server software.

- 1 Log into any UNIX workstation that:
 - Gives you access to a CD-ROM drive
 - Mounts the file system(s) into which you will load the Rose for UNIX/Linux release
- 2 Create the Rational root directory, which is referred to as *rational_dir* throughout this guide:

```
% mkdir rational_dir
```

```
% cd rational_dir
```

For *rational_dir*, supply a pathname such as: **/vendor/rational**. The *rational_dir* directory needs to be visible on all computers from which you wish to run this product, and must be writable by the installer's user name. Also, the NFS name for *rational_dir* must be the same on all computers.

Note: You must be on the correct operating system version on which you will run the release. For example, if you wish to install the HP-UX 10.20 Rose for UNIX/Linux release, you must install from an HP-UX 10.20 computer. The correct product will be selected automatically. You will not be able to make this selection manually.

Mount the CD-ROM Drive

As root, make a directory (if one does not already exist) to be the mount point for the CD-ROM drive. The following examples for each platform uses the directory **/cdrom**. Make sure you know the device name of the CD-ROM drive. If you do not know the device name for the CD-ROM drive, consult your system administrator. Mounting commands for different operating systems follow.

Sparc/Solaris with volume management

Solaris 2.x with volume management mounts to the **/cdrom** directory. This happens automatically when you load the CD-ROM drive. You have volume management if the **vold** daemon is running on your system.

Sparc/Solaris (Solaris 2.x) without volume management

```
# mkdir /cdrom
# mount -r -F hsfs /dev/dsk/c0t6d0s0 /cdrom
```

HP (HP-UX 10.x, 11.x)

```
# mkdir /cdrom
# mount -r -F cdfs /dev/dsk/c0t2d0 /cdrom
```

IBM (AIX 4.3.x)

```
# mkdir /cdrom
# mount -r -v cdrfs /dev/cd0 /cdrom
```

SGI (IRIX 6.x)

IRIX 6.x with volume management mounts **/CDROM** automatically after loading the CD into the CD-ROM drive. You have volume management if the **mediad** daemon is running on your system.

SGI/IRIX 6.x without volume management

```
# mkdir /cdrom
# mount -r -t iso9660 /dev/scsi/sc0d610 /cdrom
```

(requires **ee2.sw.cdrom** package)

Tru64 Unix

```
# mkdir /cdrom
# mount -r -t cdfs -o rrip /dev/rz4c /cdrom
```

Linux x86

```
# mount /mnt/cdrom
```

or

```
# mkdir /mnt/cdrom
# mount -t iso9660 /dev/cdrom /mnt/cdrom
```

Run the Install Program

Exit root and go to the `/cdrom` directory and run the `rs_install` command. For Solaris with volume management, go to `/cdrom/cdrom0`.

```
# exit
% cd /cdrom # (or /cdrom/cdrom0)
% ./rs_install
```

Rational recommends that you follow the menus and prompts and let `rs_install` guide you through the install.

This section provides instructions about how to install Rational Rose for UNIX/Linux. The `rs_install` command is a complete installer that includes licensing setup, license checking, product installation, and product setup. Rational recommends that you follow the menus and prompts and allow `rs_install` to guide you through the install.

Default values, where provided, are enclosed in square brackets. To accept the default value, simply press the enter key.

`rs_install` can be invoked with a number of options. For example, the `-no_log` (-nl) option can be used to stop `rs_install` from creating a log file. To see a listing of all available options, run `rs_install -help`.

The `rs_install` command can also be run under the following aliases if you only want to run a specific portion of the install:

`license_check` allows you to run the FLEXlm `lmstat` command for counted licenses and the `exinstal` command for any license file (not port@host). The `lmstat` command queries the license server for a list of licenses that are in the license pool. The `exinstal` command checks the license file format and license codes to see if everything is consistent.

Installing in Secure Environments

Problems may occur when trying to perform a remote installation of Rational Rose for UNIX/Linux in a secure environment (for example, remote access to other machines is through `rsh`) if the environment does not have access to `rsh` or `remsh`. To install Rational Rose for UNIX/Linux in this situation, perform a local installation of the software rather than a remote installation. If you experience further problems, contact Rational customer support.

Stopping and Restarting an Installation

You may stop an installation by entering **q** to quit the installation. If you choose **q**, most of your input is saved in a user defaults file that is located in *rational_dir/config/defaults*. The file name itself is of the following format:
rs_install.release_name.user_name.

The user defaults file contains general purpose defaults that relate to you and the license server that you configure. It also keeps track of the product-specific information for the installation of this specific suite and version.

Note: If you enter **q!**, your entries are not saved to the user defaults file.

You can restart the installation by running **rs_install** again. You should notice that many of your entries appear as the default value. Simply press the Enter key to continue with the installation. Once you get to the **Enter Install Mode** screen you can choose one of three options:

- Ask - if you want to reinstall the product
- Skip - if you want **rs_install** to automatically skip any product that has already been installed
- Reinstall - if you want **rs_install** to automatically uninstall and reinstall the product.

Licensing Rose for UNIX/Linux

- Utilizing Existing Licensing
- Installing Startup or Evaluation Licenses
- Requesting License Keys

Utilizing Existing Licensing

Rose 98i, Rose 2000e, Rose 2001, and Rose 2001a for UNIX licenses are valid for this release. To utilize existing licenses select the first **rs_install** option under the menu:

Rational Rose for UNIX/Linux - Licensing Options Menu

Installing Startup or Evaluation Licenses

To install Startup or Evaluation licenses, select the third **rs_install** option under the menu:

Rational Rose for UNIX/Linux - Licensing Options Menu

Requesting License Keys

AccountLink (<http://www.rational.com/accountlink>) is a Web tool that you can use to manage your permanent (or Term License Agreement) license keys. To use AccountLink, you need the License Key Certificate (included in your product shipment) to order and install your license keys. AccountLink's interface offers three license transactions:

- 1 **Get License Key(s)** - Order your permanent license key by registering Rose to a specific system. To order a permanent license key, you need your Rational License Key Certificate and the hostid of the license server or client system.

You can register :

- Rose, that will be served from a Rational license server.
- Single, multiple, or redundant Rational license server's.
- Remote systems; you do not need to sit at the system you are requesting license keys for.

To order permanent license keys for a redundant server environment, specify the redundant server's hostids in the following order:

- a Primary license server
- b Secondary license server
- c Tertiary (Backup) license server

The client systems communicate with the redundant server's in that order.

Returning and Moving License Key(s) - *Return* the existing license key to your Rational account and then order a license key for the new system. This adjusts the count of registered products in your account and allows you to get the license key for the new system.

Returning License Keys

When you return a license key from a registered system, you do not physically give the license key back to Rational. Instead, you use the return transaction in AccountLink. This transaction updates Rationals records to indicate that you are no longer using Rose on that system. This adjusts the count of registered products in your account. After AccountLink makes the adjustments to your account, Rational sends you a license key file that contains updated license keys. If you have returned all the license keys for a system, the updated license file is empty. To comply with your License Agreement, import this updated license file (whether it is empty or not) on the system.

To return a license key:

- 1 Use AccountLink to return the license keys to your Rational account.
- 2 To complete the return process, import the license key update file that you receive from AccountLink on the license server or node-locked system from which you returned the license key.

Moving License Keys

If you want to move Rose to a new system, return the existing license keys from the old system to your Rational account. Then order license keys for the new system.

To move license keys from one system to another:

- 1 Use AccountLink to return the license keys to your Rational account.
Note: To help prevent you from confusing the license key update file for the old system with the license key file for the new system, you may want to complete the return process before you order license keys for the new system.
- 2 Import the updated license key file that you receive from AccountLink on the old system.
- 3 Remove Rose or license server software from the old system.
- 4 Install Rose or license server software on the new system.
- 5 Request new license keys for the new system in AccountLink.
- 6 Import the license key file on the new system.
- 7 If you moved the license keys to a new license server, give users the name of the new license server.

Request a Copy of a License File - Get a copy of a license key file for any system that has license keys already registered to it. You will need this transaction when, you need to restore the software on your system, or your license keys become corrupt. It does not require you to return or add license keys.

With these three transactions, you can order and return permanent license keys for Rose from single or multiple Rational accounts.

Note: AccountLink does not support temporary license key transactions.

If you are not at the computer for which you are requesting license keys, you must have the following information available: hostname and hostid. If you do not know the FLEXlm Host ID (lmhostid) of your license server, run the tool `gethostinfo.sh` located in the CD-ROM extras/license directory. This tool is also available (and, may be downloaded) from AccountLink.

Receiving and Importing License Keys

After you register Rose to a specific system with AccountLink, Rational generates a license key file that contains the license key. The file is sent in an e-mail message to the contact e-mail address that you designate in AccountLink's License Contact page. You need to save the file to a known directory location as you will need to provide this information when you install the Rational software.

Note: If AccountLink is unavailable, see *Requesting License Keys by Fax* on page 9 or call Rational Licensing Support. See *Contacting Rational Technical Support* on page viii for Support phone numbers.

Requesting License Keys by Fax

This section summarizes the steps for getting a node-locked or floating permanent license key when you do not have an internet connection or when Rational AccountLink is unavailable. Although this section gives customers instructions for obtaining license keys by fax, Rational recommends that you use Rational AccountLink (www.rational.com/accountlink) to request permanent license keys.

- 1 Find your License Key Certificate in your Rational product shipment.
- 2 Print the license request form.

The documentation browser can be used directly from the CD-ROM and from the installed product area. To view the form directly from the CD-ROM, run the command `rs_help` from the CD-ROM root directory.

- 3 Use the License Key Certificate to fill out the form. Make sure that the contact, Rational account number, product, licensing, and host information are correct. Any errors will cause delays in receiving your license keys.

Note: If you are requesting a node-locked license, be sure to select NodeLocked UNIX.

- 4 Fax the request to Rational. See *Contacting Rational Licensing Technical Support* on page ix for fax and phone numbers.

Call Rational Licensing Support if you cannot use Rational AccountLink or the fax form to order your permanent license keys. See *Contacting Rational Licensing Technical Support* on page ix for phone numbers.

Receiving Permanent License Keys

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

file through e-mail. You can copy the permanent license file from the e-mail enabled system and install it on the system that is not e-mail enabled. If you cannot provide an e-mail address, contact Rational Licensing Support. See *Contacting Rational Licensing Technical Support* on page ix for the phone numbers.

Converting a Temporary License to a Permanent License

If you initially used a temporary license (evaluation or startup) to install Rose, you can convert your license to a permanent license by using the `license_setup` command. The `license_setup` command allows you to run a subset of the install script, `rs_install`. The `license_setup` command allows you to set up license options and run the license check sequence. You may also do this by running `rs_install`; however, using `license_setup` will save you time as there is no need to run through a full product installation or any of the post product installation setup. You need to have a permanent or TLA license before you start. See *Requesting License Keys* on page 7.

Unmounting the CD-ROM Drive

For CD-ROM installs, unmount the CD-ROM drive with the following commands.

Note: You must `cd` out of the directory `/cdrom` or `/cdrom/cdrom0` in order to eject the CD, otherwise you will get a “Device busy” error.

For Solaris with volume management (**vold** is running):

```
% eject cd
```

Linux x86

```
% su  
# eject cdrom
```

All others must unmount the CD as root:

```
% su  
# umount /cdrom
```

Removing Previously Installed Releases

Once you have installed the latest version of Rose for UNIX/Linux, and after all users have switched to using it, you can remove the old release to reclaim disk space.

Running the Uninstall Program

Rational includes an `uninstall` script in its `config` directory. You can uninstall the previous release of a product by running this script in the `rational_dir` directory.

Before you run **uninstall**, you must verify that your system startup file has a valid path to the Rational license daemon. See *The License Manager* on page 42. Open this file and search for the string “lmgrd”.

If the file contains the following pathname, it is correct:

```
/rational_dir/base/cots/flexlm.7.0f/platform
```

If the pathname does not look like this, you must change the path.

You also need to **kill -TERM** a font server (“xfs”) running from the release you plan to uninstall. Use **ps** to determine the process ID of the font server and then run **kill -TERM process ID** prior to uninstalling the release.

With the valid path to the Rose license daemon established and verification that the release font server is not running, you are ready to run **uninstall**. Running the script with no command line arguments causes it to display the list of products in the **releases** directory. You will be prompted for the product or suite to uninstall. If there is only one product, you will be asked for confirmation before the uninstall takes place. You must be the installer of the product to uninstall it.

If you have set up the Rose/ClearCase integration on the server running **uninstall**, you will see a message regarding “rose” and “rose_unit” merge and compare operations. The type manager(s) which manage these operations for “rose” and “rose_units” will include links to this release in relation to the merge and compare operations. The messages will include instructions describing how to correct the merge and compare links that become obsolete after uninstalling this release.

To run **uninstall**:

```
% cd rational_dir  
% config/uninstall
```


Ensure that you have the required hardware and software before proceeding with the Rose for UNIX/Linux installation.

Recommendation: Before installing Rose, you might find it helpful to get a copy of the system management guide from your platform vendor.

Requirements Checklist

The following sections list the recommended configuration to successfully install and use Rose.

You do not need to log in as root to verify that most of these requirements are satisfied. If all are satisfied, you can proceed with the installation. If any are not satisfied, however, you probably will need help from your system administrator. Changing most of these items requires knowledge of your network and workstation configurations as well as root permissions.

Recommendation: Check all the items listed, noting any requirements that are not satisfied. Give the list of needed changes to your system administrator, wait for the changes to be made, and then proceed with the installation.

Hardware Requirements and Configurations

Table 1 contains the hardware requirements for installation and use of this product. Note that the recommended amount of memory is only the suggested minimum amount. Additional memory may improve performance. Your memory requirements will also be larger if you are constructing larger models.

Table 1 Hardware Requirements

Hardware Item	Recommendation	For
Memory	64 + (32 * N) MB of RAM (where N is the number of users running Rose simultaneously on a given workstation)	Use
Server	A midrange UNIX/Linux server or client UNIX/Linux workstation (Sun servers: Sparc Station 20 and above)	Use
Client	An AIX, Solaris, HP-UX, SGI IRIX, or Tru64 Unix workstation running the required operating system level as described in the following table under operating system software requirements. The UNIX/Linux workstation must be capable of displaying X Windows or a PC running eXceed version 6.1 or higher to display X windows or for Rose on Linux x86, a PC running with Xfree and Xi Graphics X servers on Linux. It is recommended to use more than 256 colors in your graphics card/monitor configuration.	Use
Disk space	270 MB for loading release + 1-3 MB for each Rose model	Installation, Use
CD-ROM	Mounted as a UNIX/Linux file system	Installation
Display	Color display	Use

Your hardware can be configured in various ways. For example:

- A powerful, stand-alone, desktop workstation
- Moderately powerful desktop workstations with a central file server
- Less powerful desktop workstations with a central file server
- X-terminals with a powerful central file and compute server

This chapter describes the requirements for a single-user desktop workstation that you will use either stand-alone or with a file server that provides no support other than file service. The desktop workstation will run all Rose processes.

The alternative is to run all Rose processes on a remote compute server, redirecting the display to your local workstation or X-terminal. If the compute server is shared by several Rose users, it will need to be more powerful than a desktop workstation that supports only one Rose user.

Software Requirements

Table 2 contains the software requirements for installation and use of this product. Note that this is also only a suggested amount of swap space. Your requirements may be larger if you expect to construct very large models. If all of your models are small, you may need less than the amount shown here.

Table 2 Software Requirements

Software Item	Requirement	For
Operating system ^a	AIX 4.3.2 Solaris 2.5.1, 2.6, 7, 8 (kernel revision January 2000 and later) HP-UX ^b 10.20 (ACE release ^c), 11.00, and 11.11 SGI IRIX 6.5.5 Tru64 Unix 4.0f Linux x86 Red Hat 6.2 and 7.0	Use
C++ Compiler #include files	AIX CSet ++ 3.6.6 Solaris SC 5.0 HP-UX 10.20: HP aC++ B3910B A.01.21 HP aC++ B3910B A.01.19.02 Language Support Library HP-UX 11.00: HP aC++B3910B A.03.13 HP aC++B3910B X.03.11.10 Language Support Library IRIX C++ 7.3.1.1m Tru64 for Unix C++ 6.2 Linux x86 g++ 2.95.2	Analyzer

Table 2 Software Requirements

Software Item	Requirement	For
JDK, JFC, and J2EE	JDK 1.1.6 JFC 1.1 (swing classes for 1.1) JDK 1.2 (based on 1.2.1) J2SE 1.2 (based on 1.2.2) J2SE 1.3 J2EE 1.2 or any of the major Java IDEs	
Java	Rose J supports the following Java IDE's. Use the JDK appropriate to your IDE. ^d - Forte for Java Internet Edition 2.0 & 3.0(Solaris & Linux only) - Forte for Java Community Edition 2.0 & 3.0(Solaris & Linux only) - JBuilder 4.0, 5.0, and 6.0 Professional Edition (Solaris & Linux only) - JBuilder 4.0, 5.0, and 6.0 Foundation Edition (Solaris & Linux only)	
Port map daemon	Must be running	Installation, Use
TCP/IP	Must be running	Installation, Use
Host names	Must be configured	Installation, Use
Page/Swap space	150 + (50 * N) MB	Use
X Window System	Native X11R5 or X11R6 (except HP 10.20) X news on Sun with OpenWindows 3 PC X server eXceed version 6.1 or higher In addition, when running Rose for Linux x86, XFree and Xi Graphics X servers on Linux	Use

Table 2 Software Requirements

Software Item	Requirement	For
Window Manager	<p>MWM (Motif Window Manager) version 1.2</p> <p>viewm on HP-UX</p> <p>4dwm on SGI IRIX</p> <p>dtwm (CDE (Desk Top) version 1.0)</p> <p>olwm (Open Look Window Manager) on SUN is supported, but icons of Rose for UNIX/Linux may not integrate well with other icons on the screen</p> <p>In addition to those listed above, Rose for Linux x86 will run with the GNOME desktop environment with the Enlightenment window manager and the KDE desktop environment with the lcwm window manager.</p> <p>The following Window Managers are not supported:</p> <p>olvwm (olwm with virtual screens) Rose for UNIX/Linux will not remain on original virtual desktop, but rather will follow when other desktops selected.</p> <p>twm (shipped with X11)</p> <p>tvtwm (twm with virtual screens)</p> <p>fwm</p> <p>gwm</p> <p>fvwm</p>	Use

- a. All platforms may not be available at this time. Contact technical support for availability information.
- b. HP9000 Series 700.
- c. Rose requires that an ACE release be installed to run properly on HP-UX 10.20. To determine if an ACE release is installed, run `/usr/sbin/swlist | grep ACE`.
- d. See the Rose_IDE_Link_README file in the release for Rose UNIX/Linux IDE Link Integration setup information, prior to using the IDE Link integration.

Adjusting UNIX/Linux System Limits if Resources are Used Up

It is unlikely you will need to reconfigure your system limits to use Rose for UNIX/Linux. The following information should only be utilized if your system resources appear to be used up when running Rose. The following is based on MainWin requirements for Sun Solaris. If you require system information for other supported architectures, contact Rational Technical Support.

Solaris System Limit Setup

The UNIX/Linux operating system maintains a configurable list of system resource limits. The ones relevant to this discussion are listed in the following table.

Table 3 System Resource Parameters

Parameter	Description
pt_cnt	Number of ptys allowed on the system
rlim_fd_cur	Maximum number of open file descriptors allowed per process
semnmu	Maximum number of semaphore undo structures allowed system-wide
shmmax	Maximum size of a shared memory segment
shmmmin	Minimum size of a shared memory segment
shmmni	Maximum number of shared memory segments system-wide
shmseg	Maximum number of shared memory segments to which a single process can attach

An application cannot consume more system resources than allowed for by the system limits. In most cases, when an application tries to consume more system resources than allowed, no system messages are generated to notify the user of the resource allocation failure.

In particular, there may be cases where Rose fails to execute correctly due to an attempt to use more system resources than allowed. For example, consider the application that opens many files. After the application has already opened the maximum number of files allowed, its attempt to open one more file will not succeed. The application may crash or may stop functioning properly.

The solution to the problem is to modify the system resource limits to suit the applications needs.

The rest of this section discusses some of the system resource limits that an application may exceed, and describes how to modify the appropriate system settings to enable the application to execute correctly.

Note: The following procedures are intended for system administrators; root password privilege is required to change UNIX/Linux system parameters.

Note: On Solaris, the system limits are set by modifying the file `/etc/system`. Changes in this file only take effect after the system is rebooted. Since the changes to `/etc/system` may cause a failure to reboot, back up the file before using it. It is possible to reboot

the system from the boot prompt with the command `b -as` to choose which system configuration files to use during boot. For more information regarding the Solaris `/etc/system` file format, see the man pages at:

```
$ man -s 4 system
```

Maximum Number of Semaphore Undo Structures Allowed System-wide

Rose allocates a semaphore undo structure for each executing application. If a rehosted application fails to run concurrently with other instances of the application (or alongside any other rehosted application), it may be because this limit has been reached.

The number of semaphore undo structures permitted on the system should be greater than or equal to the maximum number of concurrent Rose processes that will ever run simultaneously. If you do not have any idea, start with 100.

Setting Maximum Number of Semaphore Undo Structures Allowed System-wide

Add the following line to the `/etc/system` file:

```
set semsys:seminfo_semmnu=###
```

Where `###` is the maximum number of semaphore undo structures allowed on the system.

Maximum Number of Open File Descriptors Per Process

The default maximum number of open file descriptors allowed per process on Solaris is 64. If the application fails to open a file, it may be because it reached this limit.

To set maximum number of open file descriptors allowed per process, add the following line to the `/etc/system` file:

```
set rlim_fd_cur=###
```

Where `###` is the maximum number of open file descriptors allowed per process.

Maximum Number of ptys Allowed

If at any time you suspect that your application ran out of available ptys (virtual ttys), increase the maximum number of ptys allowed.

To set maximum number of ptys allowed, add the following line to the `/etc/system` file:

```
set pt_ctn=###
```

Where `###` is the maximum number of ptys allowed on the system.

Maximum and Minimum Size of Shared Memory Segments

Rose uses shared memory. It may be that the shared memory settings are incorrect. Ensure that the maximum and minimum shared memory sizes are set as explained below.

Set the maximum size of a shared segment to at least 1,048,576 bytes (1 MB) or more.

To set maximum size of a shared memory segment to 1 megabyte, add the following line to the `/etc/system` file:

```
set semsys:seminfo_shmmax=1048576
```

Set the minimum size of a shared memory segment to be less than the maximum size, preferably 1 byte.

To set the minimum size of a shared memory segment, add the following line to the `/etc/system` file:

```
set semsys:seminfo_shmmin=1
```

Maximum Number of Shared Memory Segments

Rose (through the use of MainWin) uses shared memory to hold internal information about threads, events, and other Windows resources. An application that is very demanding of such resources (for example, it is heavily multithreaded, or it creates and maintains a large number of events) may exhaust the available shared memory allocated to it by the operating system, resulting in application crash or unexpected behavior.

There are two system resource limits that should be set to help avoid the problem:

- `shmni` - maximum number of shared memory segments system wide
- `shmseg` - maximum number of shared memory segments that a single process can attach to

In order to set `shmni` and `shmseg` we need to estimate the number of shared memory segments required by Rose at peak time, as described in the following procedure. Note that the result of this procedure is an estimate, and should be used with a safety factor.

Estimating the Number of Shared Memory Segments Required at Peak Time

- 1 Have as few as possible processes running on your system.
- 2 Run an instance of your Rose application. Activate all features of your application to make sure it is using the maximum number of resources.

- 3 Run the `ipcs` command to determine how many shared memory segments are allocated by Rose. When running only one instance of your application, it is most likely that only two shared memory segments will be allocated. The following is an example of `ipcs` output when two shared memory segments are allocated:

```
m 0 0x500182c3 --rw-r--r-- root root
m 401 0x31004030 --rw-rw-r-- user1 group1
m 402 0x31004031 --rw-rw-r-- user1 group1
```

- 4 Run another, concurrent instance of Rose. Make sure it is using the maximum number of resources. Repeat the `ipcs` command. If you get the same results as above, you know that both processes fit into the same shared memory segment. Continue adding concurrent instances of Rose and using the maximum number of resources, until you see an increase in the number of allocated shared memory segments. An example of `ipcs` output when Rose allocates more shared memory segments follows:

```
m 0 0x500182c3 --rw-r--r-- root root
m 401 0x31004030 --rw-rw-r-- user1 group1
m 402 0x31004031 --rw-rw-r-- user1 group1
m 403 0x31004032 --rw-rw-r-- user1 group1
m 404 0x31004033 --rw-rw-r-- user1 group1
```

In this example, the additional lines indicate that Rose has automatically allocated other shared memory segments.

- 5 Note the number of concurrent instances of your application, and subtract 1. For convenience, call this

number `NUM_MW_PROC_PER_MEMSEG`.

- 6 Estimate the maximum number of shared memory segments system-wide (`shmmni`) as follows:

$$\text{shmmni} = 1 + (\text{MAX_CONCUR_MW_PROC} / \text{NUM_MW_PROC_PER_MEMSEG})$$

where

- `MAX_CONCUR_MW_PROC` is the maximum number of instances of your application that are ever expected to run concurrently.
- `NUM_MW_PROC_PER_MEMSEG` is the value that was calculated earlier in step 5.

If shmmni is fractional, round it up to the next highest integer.

Note: It is recommended, as a safety precaution, that you set the actual value of shmmni to be somewhat higher than the result of the calculation.

This concludes the procedure; you are now ready to set both the shmmni and shmseg limits.

To Set the Maximum Number of Shared Memory Segments System-wide

Add the following line to the /etc/system file:

```
set shmsys:shminfo_shmmni=####
```

Where #### is the maximum number of shared memory segments system-wide that was calculated earlier in step 6.

You should set the value of shmseg - the maximum number of shared memory segments that a single process can attach to - to be equal to shmmni - the maximum number of shared memory segments system wide.

To Set the Maximum Number of Shared Memory Segments that One Process Can Attach To

Add the following line to the /etc/system file:

```
set shmsys:shinfo_shmseg=####
```

Where #### is the value of shmmni, as calculated earlier in step 6.

Operating System Run Time and/or Patch Requirements

The requirements below are in relation to the following platforms (operating system versions):

- HP-UX (10.20 (ACE), 11.00)
- SUN Solaris (2.5.1, 2.6, 7 & 8)
- Tru64 Unix

Note: If you are currently using Rose and your installed operating system patches are currently meeting your needs, we strongly recommend that you not change your installed patches. The following patches are recommended for new customers and customers experiencing problems. If you upgrade your patches, we recommend that you utilize the following patch versions. While we encourage you to contact the appropriate vendor to determine if a patch has been superseded we cannot guarantee release compatibility with a patch version we have not yet tested. For information regarding the latest patch versions tested or required with this release, visit the Rational web site at www.rational.com/support.

Please contact Rational Technical Support if you encounter any compatibility difficulties after installing a patch which supersedes the following patches.

HP-UX 10.20 & 11.00 Patch Requirements and Descriptions

The following table describes patch requirements for HP-UX 10.20 and 11.00.

Run Time Patches	Description	Reason for Patch	Operating System Versions & Notes
PHCO_19434	S700_800 10.20 csh(1) cumulative patch	Fixes crash of csh exit of MainWin	HP-UX 10.20 (ACE)
PHSS_21461	S700_800 10.20 Xserver cumulative patch	Fixes Xserver crash with multiple rectangle	HP-UX 10.20 (ACE)
PHSS_17872	HP aC++ run time libraries (aCC A.01.21)	Runtime for compiler A.01.21	HP-UX 10.20 (ACE)
PHSS_19739	S700_800 10.20 HP DCE 9000 1.5 cumulative patch	Problem with threads	HP-UX 10.20 (ACE)
PHSS_17225	S700-800 10X dld.sl(5) cumulative patch	Run time requirement	HP-UX 10.20 (ACE)
PHSS_17327 ^a	X/Motif 2.1 Dev Kit Mar99 Periodic Patch	Run time requirement	HP-UX 11.00
PHSS_19866	ld(1) and linker tools cumulative patch	Resolve dld.sl error when utilizing CORBA & Java Operation Specification Window: /usr/lib/dld.sl: Unresolved symbol: (libot.sl (unknown))	HP-UX 11.00
PHSS_16587	s700_800 11.X HP aC++ (aCC A.03.13) run time libraries	Run time requirement	HP-UX 11.00

a. See the following Note

Note: Rose for UNIX/Linux requires HP-UX OS Patch PHSS_17327 (X/Motif 2.1 Dev Kit Mar99 Periodic Patch). This Patch requires PHSS_17326 (X/Motif2.1 Runtime Mar99 Periodic Patch). PHSS_17326 has been superseded by HP-UX OS Patch PHSS_23823.

It is important to use PHSS_23823 as Rose for UNIX/Linux will not start (display) if an earlier version of this patch is installed (i.e. PHSS_21493).

If it is necessary to have a Motif Xlib runtime patch prior to PHSS_23823 and you encounter this issue, refer to the following instructions to workaround this problem:

- 1 Make sure your Rose process is no longer running. (Use **ps** to determine if the process is running, and “kill -TERM [pid]” if it is necessary to kill the process.)
- 2 As the owner of these files,
`cd rational_dir/releases/rose.I.J.K/install/patches/hppa_hpux/hp11`
- 3 `cp libX11.3 rational_dir/releases/rose.I.J.K/hppa_hpux/hp11/lib/.`
- 4 `chmod 555 rational_dir/releases/rose.I.J.K/hppa_hpux/hp11/lib/libX11.3.`
- 5 Run `rose_cleanup`.
- 6 Run `rose`.

The HP-UX patches are available at:

- <http://us-support.external.hp.com> (US, Canada, Asia-Pacific and Latin-America)
- <http://europe-support.external.hp.com> (Europe)
- <ftp://us-ffs.external.hp.com> (“anonymous” FTP)

Solaris Patch Requirements and Descriptions

Note: Some patches are required on the SERVER (the computer which users login to, to run Rose for UNIX/Linux) and the CLIENT (the computer which is used to display Rose for UNIX/Linux), and some are required only on the CLIENT. In some cases, the SERVER and CLIENT are the same computer, but often several users login to one SERVER (to run the application) and have their own displays which serve as their CLIENT. The following SUN Solaris patch recommendations are specific to SUN Solaris SERVERS and CLIENTS. Each patch mentioned is defined as either a “SERVER and CLIENT” patch, or as a “CLIENT” patch.

SERVER and CLIENT Run Time Patches	Description	Reason for Patch	Operating System Version
103566-46	Xsun patch	To fix defects in XinifThreads and _XflushInt, i.e., defect fixes for multi-threaded applications under X.	Solaris 2.5.1
103627-11	Linker patch	Fixes problems in dlclose()	Solaris 2.5.1
103640-29	Kernel nisopaccess & libthread patch	Kernel fix for dlclose()	Solaris 2.5.1
106529-04	Shared library patch for C++	Shared library fix	Solaris 2.5.1
105181-16	Kernel update patch	Fixes kernel thread problems	Solaris 2.6
105591-06	Shared library patch for C++	Shared library fix	Solaris 2.6
105633-32	Xsun patch	See “Reason for Patch” under patch 103566-46	Solaris 2.6
106040-12	X input and output method patch	Fixes input/output problem	Solaris 2.6
106327-05	Shared library patch for C++	Shared library fix	Solaris 7
108376-03	Xsun patch	See “Reason for Patch” under patch 103566-46	Solaris 7

SERVER and CLIENT Run Time Patches	Description	Reason for Patch	Operating System Version
108434-01	Shared library patch for C++	Shared library fix	Solaris 8

CLIENT (Display) Patches	Description	Reason for Patch	Operating System Version & Graphic Card <i>(see information describing how to detect graphics cards in the following Notes section)</i>
105789-07	VIS/XIL Graphics Patch	Provides the imaging and video foundation for Solaris	Supplemental for Creator or Elite graphics card on Solaris 2.5.1
105361-10	VIS/XIL Graphics Patch	Provides the imaging and video foundation for Solaris	Supplemental for Creator or Elite graphics card on Solaris 2.6
106147-03	VIS/XIL Graphics Patch	Provides the imaging and video foundation for Solaris	For Creator or Elite graphics card on Solaris 7
103792-25	M64 Graphics Patch	Required for PGX (M64 Graphics card) PCI-based Ultra 5, 10, and 60: <ul style="list-style-type: none"> ▪ To fix gui hanging problems ▪ To fix paint problems (black/white regions appear in menus, dialog boxes, toolbars, etc.) 	For PGX (M64 Graphics card) on Solaris 2.5.1
105362-20	M64 Graphics Patch	See "Reason for Patch" under patch 103792-25	For PGX (M64 Graphics card) on Solaris 2.6
106146-10	M64 Graphics Patch	See "Reason for Patch" under patch 103792-25	For PGX (M64 Graphics card) on Solaris 7

CLIENT (Display) Patches	Description	Reason for Patch	Operating System Version & Graphic Card <i>(see information describing how to detect graphics cards in the following Notes section)</i>
105790-19	FFB Graphics Patch	Supplemental patch for VIS/XIL graphics patch: <ul style="list-style-type: none"> ▪ To fix gui hanging problems ▪ To fix paint problems (black/white regions appear in menus, dialog boxes, toolbars, etc.) 	For Creator Graphics Card on Solaris 2.5.1
105360-28	FFB Graphics Patch	See “Reason for Patch” under patch 105790-19	For Creator Graphics Card on Solaris 2.6
106145-12	FFB Graphics Patch	See “Reason for Patch” under patch 105790-19	For Creator Graphics Card on Solaris 7
105791-25	AFB Graphics Patch	Supplemental patch for VIS/XIL graphics patch for Elite 3D frame buffer: <ul style="list-style-type: none"> ▪ To fix gui hanging problems ▪ To fix paint problems (black/white regions appear in menus, dialog boxes, toolbars, etc.) 	For Elite3D Graphics Card on Solaris 2.5.1
105363-24	AFB Graphics Patch	See “Reason for Patch” under patch 105791-25	For Elite3D Graphics Card Solaris 2.6
106144-12	AFB Graphics Patch	See “Reason for Patch” under patch 105791-25	For Elite3D Graphics Card Solaris 7
103793-01	TCX Graphics Patch	To fix GUI hanging, and to fix paint problems (black/white regions appear in menus, dialog boxes, toolbars, etc.)	For TCX Graphics Card on Solaris 2.5.1
106391-01	TCX Graphics Patch	To fix GUI hanging, and to fix paint problems (black/white regions appear in menus, dialog boxes, toolbars, etc.)	For TCX Graphics Card on Solaris 2.6

CLIENT (Display) Patches	Description	Reason for Patch	Operating System Version & Graphic Card <i>(see information describing how to detect graphics cards in the following Notes section)</i>
107851-01	PGX32 2.1 Graphics Patch	Recommended for GFX graphics card	For GFX Graphics Card on Solaris 2.5.1, 2.6, and 7 if "VERSION" line from pkginfo -l TSIgfxOW indicates 2.1, otherwise refer to following patches
107714-01	PGX32 Graphics Patch	Recommended for GFX graphics card	For GFX Graphics card on Solaris 2.5.1 if 107851-01 does not apply
107715-04	PGX32 Graphics Patch	Recommended for GFX graphics card	For GFX Graphics card on Solaris 2.6 if 107851-01 does not apply
107716-04	PGX32 Graphics Patch	Recommended for GFX graphics card	For GFX Graphics card on Solaris 7 if 107851-03 does not apply
105492-02	cgsix driver patch	For issue related to GX frame buffer	For cgsix Graphics Card on Solaris 2.6

The Solaris patches are available at:

- <http://sunsolve.sun.com/private-cgi/show.pl?target=patches/patch-access>

The Sun Solaris patches may not be available publicly.

The following may be necessary in order to obtain some of the Solaris patches listed above:

- Must be under maintenance support with SUN; or
- System must be under warranty; or
- You must be willing to pay for patch to receive it.

Notes

How to detect a graphics card on a Sun Solaris computer:

```
% ls /dev/fbs/*
```

```
/dev/fbs/m640 - PGX graphics card
```

```
/dev/fbs/afb* - Elite3D graphics card
```

```
/dev/fbs/ffb* - Creator/Creator3D graphics card
```

```
/dev/fbs/cgsix* - GX graphics card
```

```
/dev/fbs/leo* - ZX graphics card
```

```
/dev/fbs/sx* - SX graphics card
```

```
/dev/fbs/tcx* - TCX graphics card
```

```
/dev/fbs/gfx* - GFX graphics card
```

Errors Encountered if Correct SUN Solaris Runtime Not Installed

A user will encounter the following error if the appropriate Sun Solaris runtime patches are not installed:

```
ld.so.1: exe_name: fatal: libCrun.so.1: open failed: No such file or directory
```

Displaying on Ultrabook, Using PGX Graphics Card

A CDE crash may occur when displaying Rose for UNIX/Linux on a Ultrabook using a PGX Graphics Card, if SUN Solaris patch 105362-26 is installed.

If using a PGX Graphics Card, we recommend that SUN Solaris patch 105362-20 be installed as this is the latest version tested and determined to be compatible with this release.

If you encounter the CDE crash, uninstall patch 105362-26 and if possible install “105362-20”. If SUN Solaris patch “105362-20” is not installed, the following may occur:

- GUI Hanging Issues
- Paint Problems (i.e. black/white regions may appear in menus, dialog boxes, toolbars, etc.)

If you uninstall patch 105362-26 and encounter any of the issues described above, contact Rational Technical Support if patch 105362-20 is not available.

Support for the PGX32 Add-on Board

If your client computer has the PGX32 add-on board (based on the Permedia 2 chip), you need to install the drivers and patches for this card. You cannot see the device in the `/dev/fbs` directory unless the drivers are installed.

Contact Rational Technical Support if you require information in relation to the SUN Solaris drivers or patches for the PGX32 add-on board.

Tru64 Unix Run Time Requirement and Description

Rose for UNIX/Linux requires the C++ run time library (`libcxx`) compatible with Compaq C++ for Tru64 Unix, Version 6.2. Rose for UNIX/Linux, therefore requires a newer version of the C++ run time library (`libcxx`) than is provided by Tru64 Unix versions prior to 5.1.

Either the subset “CXXREDIST620”, or the C++ compiler kit (version 6.2) must be installed to satisfy Rose for UNIX/Linux run time requirements.

Errors Encountered If Correct Run Time Not Installed

A user will encounter unresolved symbols (see example listing below), if the appropriate Compaq C++ for Tru64 Unix run time is not installed on the Tru64 Unix server, running Rose for UNIX/Linux:

```
30494:/rational/releases/rose.I.J.K/alpha_osf1/bin/rose_exe:
/sbin/loader: Error: Unresolved symbol in
/rational/releases/rose.I.J.K/alpha_osf1/bin/rose_exe: __nw__XUIPv
```

```
30494:/rational/releases/rose.I.J.K/alpha_osf1/bin/rose_exe:
/sbin/loader: Error: Unresolved symbol in
/rational/releases/rose.I.J.K/alpha_osf1/bin/rose_exe: __dl__XPvPv
```

```
30494:/rational/releases/rose.I.J.K/alpha_osf1/bin/rose_exe:
/sbin/loader: Error: Unresolved symbol in
/rational/releases/rose.I.J.K/alpha_osf1/bin/rose_exe: __cxx_call_static_dtors
```

Rose for UNIX/Linux will automatically check to determine if the correct run time library is installed on your Tru64 Unix computer:

- During the final installation steps
- When running Rose for the first time

Necessary Run Time (6.2 libcxx) Provided In Rose for UNIX/Linux

We have included the necessary Compaq C++ for Tru64 Unix run time in case you encounter the type of errors shown previously when attempting to run this release.

The file **CXXREDIST620V01.tar** is located under:

rational_dir/releases/rose.I.J.K/install/patches/alpha_osf1

How To Determine If Tru64 Unix Computer Includes the Correct Run Time To Run Rose for UNIX/Linux

Run:

```
/usr/sbin/setld -i | grep CXX | grep installed
```

If either subset CXXBASEnnn or CXXREDISTnnn is installed, the correct run time is available to run Rose for UNIX/Linux. (There would be no need to install the Compaq C++ for Tru64 Unix run time library provided in this release.)

How To Install the Run Time Library (libcxx) Provided In This Release

Refer to the instructions below, if it is necessary to install the Compaq C++ for Tru64 Unix 6.2 run time library provided in this release.

- 1 Login as superuser.
- 2 Copy the file **CXXREDIST620V01.tar** to **/usr/lib/cmplrs/cxx**.
- 3 **cd /usr/lib/cmplrs/cxx**
- 4 Untar the file by entering the following:

```
tar -xvf CXXREDIST620V01.tar
```

This command creates a setld kit for installing **libcxx.so** in directory **CXXREDIST620.kit**.

- 5 Install the run time library by entering the following command and selecting the subset displayed:

```
/usr/sbin/setld -I CXXREDIST620.kit
```

Automated Requirements Checking

Note that a script named **check_reqs** included in the **rose.I.J.K/install** directory is loaded from the Rose release. This script can assist you in the verification of required configurations and the minimum recommended resource settings. A copy of **check_reqs**, named **check_rose_reqs**, is placed in the *rational_dir/releases/rose.I.J.K/bin* directory.

While you are installing Rose, the installation scripts automatically use **check_reqs -install** to verify TCP/IP, the portmap daemon, and host names. These are requirements for the workstation(s) on which you install Rose.

The **check_reqs** and **check_rose_reqs** scripts are run by the installation and **rose** scripts respectively to verify TCP/IP, the portmap daemon, host names, memory, page or swap space, pseudo terminals, resource limits, the X Window System, and the Motif window manager. These are requirements and recommendations for the workstation(s) on which you run Rose. The **check_rose_reqs** script is also run the first time that Rose is started to automatically notify you if operating system patches are necessary.

The **check_reqs** script is not able to check:

- The CD-ROM or tape drive
- The maximum number of processes per user

This chapter details Rose for UNIX/Linux configuration, performed after installation. You must complete these steps before using Rose.

The following topics are covered in this section:

- *Rose for UNIX/Linux Configuration Files* on page 35
- *Rose.ini File Replace By rose.reg* on page 35
- *Configuring Your Printer* on page 36
- *Using Rose for UNIX/Linux* on page 37
- *Initial Runtime Instructions When Upgrading* on page 37
- *Installing and Utilizing Converted Fonts Provided in this Release* on page 38
- *Configuring the Rose/ClearCase Integration* on page 38

Rose for UNIX/Linux Configuration Files

Executing `rational_dir/releases/rose.I.J.K/bin/rose` will run the Rose configuration file `config.sh` prior to bringing up Rose. The configuration file sets environment information such as the ROSE home directory and location of the license file.

Rose.ini File Replace By rose.reg

Any settings previously in the `Rose.ini` file are now in the registry file, `rose.reg`. This new registry file is located in the `rational_dir/releases/rose.I.J.K/registry` directory of the release. The settings in this file are entered in your registry, after running “`rose_cleanup`” and then “`rose`”. Any changes made to the release `rose.reg` file will apply to all users running `rose`. If you wish to make changes specific for your environment, a `rose.reg.template` file is available in `rational_dir/releases/rose.I.J.K/registry`. Copy this file to your `$HOME` directory and name it `$USER.reg`. Edit this file with the settings you prefer, run `rose_cleanup` and then `rose`. Rose will automatically register your `$HOME/$USER.reg` file and your settings will be available in your Rose session.

Configuring Your Printer

Perform the following steps to configure your printer for use with Rose for UNIX/Linux.

- You may print to your default \$PRINTER by selecting the appropriate print options within Rose. Rose will print to the printer defined in the PRINTER environment variable.
- You may install a default printer, or redefine or add ports by editing your \$HOME/windows/win.ini file as described below. Any changes made to your \$HOME/windows/win.ini will apply to your personal configuration.

You may also edit the release win.ini file (*rational_dir/releases/rose.1.J.K/mw/win.ini*). In this case, the same change will apply to any new user who runs the release.

- Specify the default printer under the “[windows]” section, using the following syntax:

```
device=outputdevicename, PSCRIPT, portconnection:
```

The keyword “PSCRIPT” (PostScript) is used in place of the ‘devicedriver’.

Rose for UNIX/Linux supports PostScript printing only.

- Specify the UNIX/Linux command in the “[ports]” section. The “[ports]” section lists available communication and printer ports. The “LPTn” keywords are mapped to UNIX/Linux commands. In the example below LPT1 and LPT2 are mapped to the print command “lp”. The print job output is sent to a file. The output file is then sent to the printer. The term “%s” tells the system to substitute the name of the PostScript intermediate output file. The term “-dps1700” in the example directs the print job to a printer named “ps1700”.

```
[ports]
LPT1:=lp -c "%s"
LPT2:=lp -c -dps1700 "%s"
LPT3:=
```

Note: When using `lp`, the `-c` option should always be used.

- Rose does not use the “[PrinterPorts]” section. Modifying this section will have no effect.

- The “[devices]” section lists the active and inactive output devices that can be accessed by device driver “PSCRIPT” and specifies ‘ports’ to which these devices are connected. In the following example, “Default Postscript Printer=PSCRIPT,LPT1:” specifies that the printer is connected to the PSCRIPT queue that is connected to LPT1:

```
[devices]
Default Postscript Printer=PSCRIPT,LPT1:
Postscript Printer QMS=PSCRIPT,LPT2:
```

The devices listed in this section will appear in the **File > Print ...** dialog, under “Name”. In this dialog you may select the printer you wish to use.

Using Rose for UNIX/Linux

Use the following commands to start Rational Rose products:

Product	Command
Rose for UNIX/Linux	rose
Analyzer*	analyzer
Rose Model Integrator	modelint

*Not available in Rose Linux x86 release due to availability of ANSI C++.

These commands are shell scripts contained in the *rational_dir/releases/rose.I.J.K/bin* directory.

Initial Runtime Instructions When Upgrading

Any user running a previous version of Rose for UNIX/Linux, should do the following prior to running Rose.

- Run *rational_dir/releases/rose.I.J.K/bin/rose_cleanup*

It is only necessary to perform this step once - prior to running Rose for UNIX/Linux.

To run Rose, see the previous topic *Using Rose for UNIX/Linux* on page 37.

Installing and Utilizing Converted Fonts Provided in this Release

Rose for UNIX/Linux includes fonts that are compatible and may be used on both PC and UNIX/Linux displays. For more information on using these fonts, please see the *Release Notes*.

Configuring the Rose/ClearCase Integration

It may be necessary to reconfigure a previous Rose/ClearCase integration set up. Prior to using the Rose/ClearCase integration with this release, review the following file (located in this release):

rational_dir/releases/rose.I.J.K/addins/clearcase/README

This chapter presents an overview of the Rose installation to provide context for the installation procedures from *Installation Quick Start* on page 1.

The following topics are covered in this section:

- *Installation Checklist* on page 39
- *Rose Version Numbers* on page 39
- *Hardware Configurations* on page 40

Installation Checklist

The major steps in the Rose installation are listed below. The time required for each major step will vary with factors such as your experience level, your workstation load, and your network performance.

- 1 Read the release note for any instruction updates not available at the printing of this manual.
- 2 Ensure that your workstations satisfy the requirements described in *Prerequisites* on page 13. Your system administrator may need to perform some of the requirements.
- 3 Load the release as described in *Installation Quick Start* on page 1.
- 4 Configure your system as described in *Configuring Rose for UNIX/Linux* on page 35.

Rose Version Numbers

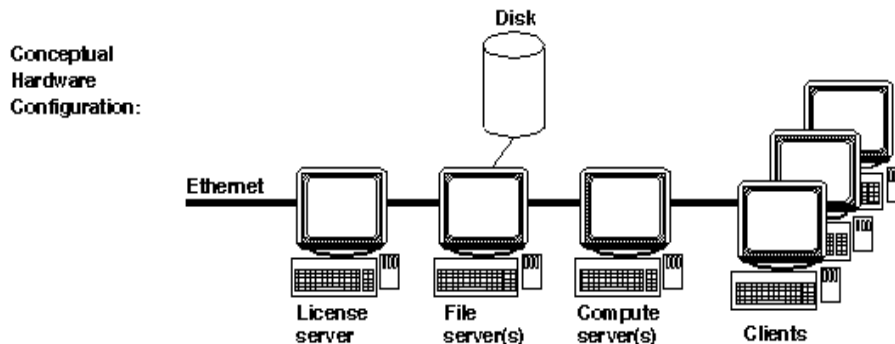
This installation guide refers to the Rose version numbers as *I.J.K* where *I* is the major release, *J* is the minor update, and *K* is the micro release number. Please substitute the current version number when you see *I.J.K*.

Hardware Configurations

Rose can be installed on a stand-alone workstation or a client-server network that includes many workstations.

Conceptually, you can have different workstations performing each of these roles:

- **Clients**
 - Displays X windows and accepts input from users.
- **File Servers**
 - Stores the installation and user data (for example, Rose models). When a file server is distinct from other workstations, its file systems must be:
 - Visible via the Network File System (NFS™)
 - Mounted on all workstations with the same pathnames
- **Compute Servers**
 - Runs Rose processes. When a compute server is distinct from a client, the compute server is accessed via remote login (**rlogin**) or remote shell (**rsh**) from the client.
- **License Server**
 - Runs daemons that control access to Rose.



More commonly, a file server doubles as the license server, and clients double as their own compute servers. In the simplest configuration, a stand-alone workstation performs all roles.

If you are installing Rose on a client-server network, note that you must enter specific commands on specific workstations. For example, the license server daemon must be started on that license server, not on another workstation.

When you buy Rational Rose for UNIX/Linux, you purchase some number of floating or node-locked licenses. Floating licenses allow anyone on your network to use Rose as long as a license is available. Thus, the number of licenses that you purchase determines the maximum number of users who can use Rose concurrently. Node-locked licenses limit your use of Rose for UNIX/Linux to a specific host.

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

- *How Licenses Work* on page 41
- *The License Manager* on page 42
- *License Manager Commands* on page 43
- *The License File* on page 44
- *Obtaining Licenses* on page 46
- *User-Based Licenses* on page 50
- *Frequently Asked Questions* on page 50
- *FLEXlm User Guide* on page 51

How Licenses Work

Licenses are controlled by a *license manager* (FLEXlm™ software delivered as part of Rose) that runs on a *license server* (one of your workstations). The license manager monitors license access, simultaneous usage, idle time, and so on.

When you start Rose, you are initially unlicensed. If a license is available, the license manager gives you a license and you retain it as long as you keep using Rose. When you exit Rose, 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 until a license is returned by another user.

The License Manager

Rose for UNIX/Linux uses the Flexible License Manager, FLEXlm™, from Globetrotter Software, Inc. Rose requires FLEXlm 7.0f or greater. The license manager includes the following components:

- A *vendor daemon* named **rational** that dispenses Rose licenses.

The **rational** daemon is used for all of Rational's licensed products. If you have other products from other vendors that also use FLEXlm, they will include their own vendor daemons.

- A *license daemon* named **lmgrd**.

The same license daemon is used by all licensed products from all vendors that use FLEXlm. The **lmgrd** daemon does not process requests on its own, but forwards requests to the appropriate vendor daemon.

- A *license file* that you maintain.

It specifies your license servers, vendor daemons, and product licenses.

Note: Rational recommends that you use a single combined license file for all of our products.

Once the license file is in place and the license daemons are running, the server computer needs to be set up to automatically restart the license server when it reboots. You will be instructed by **rs_install** or **license_setup** how to do this. These commands cannot do this because this step requires root permissions. The commands to do are as follows:

On HP-UX:

```
% su
```

```
# cp rational_dir/config/start_lmgrd_on_server-name \  
/sbin/init.d/SlmRational.sh
```

```
# ln -s /sbin/init.d/SlmRational.sh/sbin/rc2.d/SlmRational.sh
```

On Solaris:

```
$ su
```

```
# cp rational_dir/config/start_lmgrd_on_server-name \  
/etc/rc2.d/SlmRational.sh
```

On Tru64 Unix:

```
cp rational_dir/config/start_lmgrd_on_server_name \  
/sbin/init.d/SlmRational.sh
```

```
ln -s /sbin/init.d/SlmRational.sh /sbin/rc2.d/SlmRational.sh
```

On SGI:

```
cp rational_dir/config/start_lmgrd_on_server_name \  
/etc/init.d/SlmRational.sh
```

```
ln -s /etc/init.d/SlmRational.sh /etc/rc2.d/SlmRational.sh
```

On AIX:

Edit `/etc/inittab` and add the line:

```
lmgr:234:once:/bin/sh rational_dir/config/start_lmgrd_on_server_name
```

On Linux x86:

```
rm -f /etc/rc.d/*d/S98Rational  
cp rational_dir/config/start_lmgrd_on_server_name \  
/etc/rc.d/init.d/S98Rational  
ln -s /etc/rc.d/init.d/S98Rational /etc/rc.d/rc3.d/S98Rational  
ln -s /etc/rc.d/init.d/S98Rational /etc/rc.d/rc4.d/S98Rational  
ln -s /etc/rc.d/init.d/S98Rational /etc/rc.d/rc5.d/S98Rational
```

Rose provides installation scripts to guide you through this setup. They are described in *Installation Quick Start* on page 1.

License Manager Commands

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 axww | grep -v grep | egrep "lmgrd | rational"
```

or

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

Their output should include lines similar to the following (your pathnames may vary):

```
538 ?? S 0:03.50 /rational/base/cots/flexlm.7.0f/platform/lmgrd  
-c /rational/config/servername.dat  
-l /rational/config/servername.log  
539 ?? I 0:00.90 rational -T brazil 6.0 3 -c ...
```

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
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.

For more information on these commands, you can view the FLEXlm online documentation in the *rational_dir/releases/rose.I.J.K/docs/html/FLEXlm_End-User_Manual* directory. This documentation is provided in HTML. These commands are documented in the “License Administration Tools” chapter.

The License File

The default Rational license file is either:

rational_dir/config/server-name.dat

or

rational_dir/config/Temporary.dat

The *Temporary.dat* file is used for startup and evaluation licenses while the *server-name.dat* file is used for permanent licenses.

When users start Rose, the environment variable `LM_LICENSE_FILE` is automatically defined for them. FLEXlm uses this variable to locate the license file. The `LM_LICENSE_FILE` environment variable can contain other non-Rational products, but Rational recommends that you keep the licenses in separate files.

Format

The license file is a text file that is set up by the `rs_install` or `license_setup` programs. Your license file will contain a `SERVER` line, a `VENDOR` line, and one or more `INCREMENT` or `FEATURE` lines.

Detailed information about the license file and licensing can be found in the FLEXIm End User Manual that is included online with this release and at <http://www.globetrotter.com/manual.htm>.

Types of Licenses

Node-locked and Floating Licenses

Node-locked licenses are created only for a specific system.

Floating licenses are licenses that can be shared by multiple users on multiple systems. A Rational license server controls use of the floating licenses.

Floating licenses allow anyone on your network to use Rational Rose for UNIX/Linux as long as a license is available. Thus, the number of licenses that you purchase determines the maximum number of users who can use Rational Rose for UNIX/Linux concurrently.

Permanent Licenses and Temporary License Keys

When you register Rational products to specific systems (license server or client) in AccountLink, Rational generates license keys and e-mails these permanent license keys in a license file to you. The permanent keys let you use the Rational products for an indefinite period of time. However, Rational assigns an expiration date to the license keys if your company has negotiated a Term License Agreement (TLA). Technically, TLA keys are not permanent, but Rational groups TLA licenses in the permanent license key category.

To use Rational products for an evaluation period or if you expect a delay in receiving your permanent keys, you can install the temporary license key provided in your Rational License Key Certificate. Because Rational has not generated the temporary key for a specific system, you can use it on any system until the specified expiration date.

Permanent and temporary license keys can be floating or node-locked. The difference is that a temporary key is not generated for a specific system and a permanent key is generated for a specific system.

Emergency and Evaluation Keys

Emergency and evaluation license keys are temporary license keys. They can be floating or node-locked. They are short-term licenses that are not generated for a specific system.

Suite Licenses and Point Product Licenses

A Rational license key indicates whether it is a Rational Suite license, such as Rational Rose for UNIX/Linux, or a point-product license, such as Rational Rose. A Rational license file can contain multiple floating or node-locked suite and point-product license keys.

Upgrading Licenses

If you are upgrading from an earlier version of a Rational Rose or point-product, you can reuse your current Rational Suite and Rational Rose license keys.

Adding Point-Products to Licenses

If you are adding a new product to your system, you have to request a new license file that includes the new point-product license key. You cannot use the suite license for individual point product installations.

Using Your Rational License Key Certificate

To get your permanent or TLA license keys, you need to supply information from your Rational License Key Certificate. This certificate is enclosed in a large green envelope in your shipment. The information, especially the Rational Account Number, on this certificate verifies that your company has purchased licenses to run Rational products.

Using “Getting Started with Rational Software”

The “Getting Started with Rational Software” web pages provide step-by-step instructions, examples, and graphics for obtaining and installing Rational license keys. Find “Getting Started with Rational Software” at www.rational.com. Click **Support > Support Services > Getting Started**.

Obtaining Licenses

AccountLink (<http://www.rational.com/accountlink>) is a Web tool that you can use to manage your permanent (or Term License Agreement) license keys. To use AccountLink, you need the License Key Certificate (included in your product shipment) to order and install your license keys. AccountLink’s interface offers three license transactions:

- 1 **Get License Key(s)** - Order your permanent license key by registering Rose to a specific system. To order a permanent license key, you need your Rational License Key Certificate and the hostid of the license server or client system.

You can register :

- Rose, that will be served from a Rational license server.
- Single, multiple, or redundant Rational license server's.
- Remote systems; you do not need to sit at the system you are requesting license keys for.

To order permanent license keys for a redundant server environment, specify the redundant server's hostids in the following order:

- a Primary license server
- b Secondary license server
- c Tertiary (Backup) license server

The client systems communicate with the redundant server's in that order.

Returning and Moving License Key(s) - *Return* the existing license key to your Rational account and then order a license key for the new system. This adjusts the count of registered products in your account and allows you to get the license key for the new system.

Returning License Keys

When you return a license key from a registered system, you do not physically give the license key back to Rational. Instead, you use the return transaction in AccountLink. This transaction updates Rationals records to indicate that you are no longer using Rose on that system. This adjusts the count of registered products in your account. After AccountLink makes the adjustments to your account, Rational sends you a license key file that contains updated license keys. If you have returned all the license keys for a system, the updated license file is empty. To comply with your License Agreement, import this updated license file (whether it is empty or not) on the system.

To return a license key:

- 1 Use AccountLink to return the license keys to your Rational account.
- 2 To complete the return process, import the license key update file that you receive from AccountLink on the license server or node-locked system from which you returned the license key.

Moving License Keys

If you want to move Rose to a new system, return the existing license keys from the old system to your Rational account. Then order license keys for the new system.

To move license keys from one system to another:

- 1 Use AccountLink to return the license keys to your Rational account.
Note: To help prevent you from confusing the license key update file for the old system with the license key file for the new system, you may want to complete the return process before you order license keys for the new system.
- 2 Import the updated license key file that you receive from AccountLink on the old system.
- 3 Remove Rose or license server software from the old system.
- 4 Install Rose or license server software on the new system.
- 5 Request new license keys for the new system in AccountLink.
- 6 Import the license key file on the new system.
- 7 If you moved the license keys to a new license server, give users the name of the new license server.

Request a Copy of a License File - Get a copy of a license key file for any system that has license keys already registered to it. You will need this transaction when, you need to restore the software on your system, or your license keys become corrupt. It does not require you to return or add license keys.

With these three transactions, you can order and return permanent license keys for Rose from single or multiple Rational accounts.

Note: AccountLink does not support temporary license key transactions.

If you are not at the computer for which you are requesting license keys, you must have the following information available: hostname and hostid. If you do not know the FLEXlm Host ID (lmhostid) of your license server, run the tool **gethostinfo.sh** located in the CD-ROM extras/license directory. This tool is also available (and, may be downloaded) from AccountLink.

Receiving and Importing License Keys

After you register Rose to a specific system with AccountLink, Rational generates a license key file that contains the license key. The file is sent in an e-mail message to the contact e-mail address that you designate in AccountLink's License Contact page.

You need to save the file to a known directory location as you will need to provide this information when you install the Rational software.

Note: If AccountLink is unavailable, see *Requesting License Keys by Fax* on page 49 or call Rational Licensing Support. See *Contacting Rational Technical Support* on page viii for Support phone numbers.

Requesting License Keys by Fax

This section summarizes the steps for getting a node-locked or floating permanent license key when you do not have an internet connection or when Rational AccountLink is unavailable. Although this section gives customers instructions for obtaining license keys by fax, Rational recommends that you use Rational AccountLink (www.rational.com/accountlink) to request permanent license keys.

- 1 Find your License Key Certificate in your Rational product shipment.
- 2 Print the license request form.

The documentation browser can be used directly from the CD-ROM and from the installed product area. To view the form directly from the CD-ROM, run the command `rs_help` from the CD-ROM root directory.

- 3 Use the License Key Certificate to fill out the form. Make sure that the contact, Rational account number, product, licensing, and host information are correct. Any errors will cause delays in receiving your license keys.

Note: If you are requesting a node-locked license, be sure to select NodeLocked UNIX.

- 4 Fax the request to Rational. See *Contacting Rational Licensing Technical Support* on page ix for fax and phone numbers.

Call Rational Licensing Support if you cannot use Rational AccountLink or the fax form to order your permanent license keys. See *Contacting Rational Licensing Technical Support* on page ix for phone numbers.

Receiving Permanent License Keys

If you request a new license using AccountLink, Rational will send you a license key file through e-mail. If you request a permanent license key by fax and you have specified an e-mail address in your contact information, you will receive a license key file through e-mail. You can copy the permanent license file from the e-mail enabled system and install it on the system that is not e-mail enabled. If you cannot provide an e-mail address, contact Rational Licensing Support. See *Contacting Rational Licensing Technical Support* on page ix for the phone numbers.

Converting a Temporary License to a Permanent License

If you initially used a temporary license (evaluation or startup) to install Rose, you can convert your license to a permanent license by using the `license_setup` command. The `license_setup` command allows you to run a subset of the install script, `rs_install`. The `license_setup` command allows you to set up license options and run the license check sequence. You may also do this by running `rs_install`; however, using `license_setup` will save you time as there is no need to run through a full product installation or any of the post product installation setup. You need to have a permanent or TLA license before you start. See *Requesting License Keys by Fax* on page 49.

User-Based Licenses

User-based licenses are not supported in this release.

Frequently Asked Questions

- Can I use the Flex licensing software I already have installed?

Yes. Install our license code in the default location (in *rational_dir*/base/cots) and use it to serve the Rational licenses.

Use a common *rational_dir* for all Rational products. Exception: only one architecture of each Rose release may be installed in one *rational_dir*. For example, if the Sun Solaris Rose release is installed in the *rational_dir*, you may not install the Rose release for HP-UX 10.20 in the same *rational_dir*. You may however install HP-UX 10.20 and HP-UX 11.00 in the same *rational_dir*.

No room? Create a link for a product to some other file system and install through the link. For example, to put Rose on some other big filesystem, do:

```
cd rational_dir/releases
```

```
mkdir /bigfs/rose.I.J.K
```

```
ln -s /bigfs/rose.I.J.K rose.I.J.K
```

- I already have FLEXlm installed and managing non-Rational licenses, and now I want to install Rose for UNIX/Linux. Can I do this?

Yes. You can have more than one `lmgrd` on a computer, but they must use different ports. You can only have one rational daemon on the computer.

- a What do I do if my existing FLEXlm installation uses port 27000?

27000 is the default port, so you need to specify a different port number for Rose 2002. This is done in the **rs_install** menu **4) Server and License File Settings...** Choose the next consecutive available port number such as 27001.

- b What do I do if my existing FLEXlm installation uses a port other than 27000?

You don't have to do anything since **rs_install** will default to port 27000. If you are using the same server for other Rational products, you must specify the port number you are using.

- What should I do if my vendor daemon dies with Status 39 when I try to start the license manager on my Sun computer?

This is a file descriptor problem, and is corrected in FLEXlm 6.1b. To work around this issue, start **lmgrd** in a shell script, i.e.

```
#/bin/sh
ulimit -H -n 1024 lmgrd ...
```

- I already have DevelopmentStudio for UNIX installed, with FLEXlm serving DevelopmentStudio licenses. What do I need to do to install Rose 2002?

You can use **rs_install** to setup Rose licenses. If you point **rs_install** at an existing license file, it will get backed up to **license_file.priorN** (N starts at 1 and counts up to the next available prior file) and the new license file is created. The **rs_install** program appends every license in the backup file that is not in the new license file.

- Can I use the FLEXlm redundant license server feature?

If you want to use the FLEXlm redundant license server feature, then you should contact Rational Technical Support. See *Preface* on page vii for additional information.

FLEXlm User Guide

An HTML version of the *FLEXlm User Guide* is provided in the **docs** directory and at <http://www.globetrotter.com/manual.htm>.

Additional information on FLEXlm can be found at <http://www.globetrotter.com/lmfaq.htm>.

This chapter contains information to be used if you run into problems installing or running Rational Rose for UNIX/Linux. The following areas are covered in this chapter:

- *Troubleshooting the Installation of Rose* on page 53
- *Automatic Traceback if Rose should Crash or Hang on SUN Solaris or HP-UX* on page 57
- *Contacting Rational Customer Support* on page 59

Troubleshooting the Installation of Rose

This section covers installation troubleshooting.

General Problems

If you have problems running the install commands and see a message like this:

Could not find rs_install data.

Check that you have correctly mounted the CDROM. Refer to *Mount the CD-ROM Drive* on page 3. Make sure that you are running the install commands from the CDROM directory. There must be an *extras* directory in the same location. The command looks for the install data in there. If you have mounted the */cdrom* directory from another system, make sure the directory has been properly exported - it needs to be listed in the filesystem table for exported file systems. This file is operating system dependent.

If you are having problems with the display showing strange characters on your screen and your screen does not clear for each new menu, you may have your `TERM` environment variable set incorrectly. Try setting it to something else like `xterm`, `vt100` or `ansi`. To prevent the program from using fancy escape sequences to clear the screen or do underlining, run the programs with the `-no_clear` (alias `-nc`) option. This will prevent the commands from using these escape sequences. If underlining is the only problem, use the `-no_underlining` (alias `-nu`) option.

If uninstalling something fails, it may be that you are not the original installer. Log in as the person who installed the product and rerun the `uninstall` as that person.

If you have problems creating directories, it may be that you do not have the correct permissions. Check your login name and the groups you belong to using the UNIX `id` command. Check the directory permissions of the directory where you are trying to create a directory. You must have read (r), write (w), and execute (x) permissions for you or the groups you are in.

If you have permission problems with the `tar` command, it may be that you are trying to install on top of an already existing product. In most cases, this type of error can be ignored.

If you run out of disk space while installing products, you cannot ignore this type of problem. The best thing to do is uninstall Rose and reinstall it in a place where you have sufficient space to do the install. The approximate amount of space you need to install Rose is listed in the Customization Menu of the `rs_install` command.

If you see a message like this:

FAIL: Could not install file0:

This means that the install was trying to untar this file. In doing so, it expected it to create a directory structure that looks something like `'releases/product.ver/install'`. It could be that the `tar` command failed due to lack of disk space. Or you do not have permissions to read the file. Check to see if you can untar the file that is shown by doing a `tar -tf <file0>` where `<file0>` is the full path to file0.

If you see a message like:

FAIL: Could not find a file to install from here:

This means that the install could not find a tar file in the listed directory. It could be that you are trying to use the wrong CD for your platform. For example, you may be using a Solaris CD-ROM on a non-Solaris computer, or an HP-UX CD-ROM on a non-HP-UX computer, etc.

Licensing Problems

If you see a message like this:

There is a problem with one license code.

or this:

There are problems with <N> license codes.

This means that the license codes in the license file do not match and are inconsistent with the text of the license. The licenses consist of several parameters and a 12, 16 or 20 digit hexadecimal code that was created using these parameters. The parameters are in ASCII text but they cannot be changed or it will invalidate the license. The parameters used to create the license are the server host ID, license name, vendor daemon name, expiration date, number of users (quantity), `VENDOR_STRING`, `OVERDRAFT`, `SUPERSEDE`, `DUP_GROUP`, `vendor_info`, `NOTICE` and `ck` (checksum).

If you see a message like:

It appears that Rose 2002 for UNIX is not licensed.

This means that there is a problem with the license server. It could be that:

- 1 The license server was never started.
- 2 The license server failed to start. This happens when the license codes are inconsistent.
- 3 There is already a license server running but it is not using the Rose 2002 for UNIX license file

Check the license server log file which is kept in `/rational_dir/config/server-name.log`.

If you see a message like:

Users of Rose98_Unix: Cannot get users of Rose98_Unix: No such feature exists (-5,222)

This could mean that multiple Rational servers are running, or a stale lock file was not cleaned up. This error could result from either:

- 1 Another copy of `lmgrd` running.
- 2 A prior `lmgrd` was killed with “`kill -9`” which would leave the vendor daemon running.

To correct this, kill the `lmgrd` and `rational` processes and remove the Rational lock file:

- a Use this `ps` command or equivalent to find the process IDs:

```
ps -ax | egrep "lmgrd|rational"
```

- b Kill those processes:

```
kill Process-ID-of-lmgrd Process-ID-of-rational
```

- c Remove the **lockrational** file which can be found at either:

/usr/tmp/lockrational

or

/tmp/lockrational

You may need to reboot the license server computer if this fails to correct the problem.

If you see a message like:

You do not have remote access to license-server-name from local-host-name, so it cannot be used as a license server.

It may be that the license server is not the same computer you are installing on. You must have remote shell access (rsh or remsh) to the license server computer.

If you see a message like:

Host, license-server-name does not have access.

If the license server is not the same computer you are installing on, it must have access to the *rational_dir* directory where Rose has been installed.

If you see a message like:

Cannot set license-server-name's host ID

with this command:

rational_dir/base/cots/flexlm.7.0f/lmhostid

The **lmhostid** command failed. Check to see if the **lmhostid** command shown will run on your local host. If so, enter the host id number in the **License Server Host ID Menu** (choice number 2).

If you see a message like:

Cannot access *rational_dir*/base/cots/flexlm.7.0f/lmhostid on license-server-name.

There was a problem accessing the *rational_dir* directory or the **lmhostid** command did not get installed from the CD-ROM.

If you see a message like:

Host ID <nnn> not valid. Less than 4 digits.

This means that the host ID number will not work. Check again using the **lmhostid** to see what the host ID is. It should be at least 4 or more hexadecimal digits.

If you see a message like:

Port number <pn> was found in /etc/services.

If you entered a port number and it appears that the number is in use in your `/etc/services` file, you may have a problem with licensing. Rational products use FLEXlm which uses TCP/IP sockets to communicate with a license server using a specific port number. This port number is specified in the license file on the `SERVER` line. The license server will not be able to open a socket on a port that is already in use. Rational recommends you use the default port number, 27000.

If you see a message like:

**Could not find this string: 'begin .* license.*.upd'
or this string:
'INCREMENT rose_unix rational' in this file:
name-of-file-you-are-importing-license-information-from
Failed to import license information.**

This means that you did not receive any uuencoded or plain text e-mail from Rational containing your license keys. If you did, you need to save the message in a file and use that file as the import file. Do this from `rs_install` or from the `license_setup` Enter License Key Menu.

Automatic Traceback if Rose should Crash or Hang on SUN Solaris or HP-UX

An automatic traceback mechanism is available for Rose for SUN Solaris and HP-UX. If Rose (`rose_exe`) should crash, provide the automatically produced traceback data to Rational Technical Support as described below:

SUN Solaris

If the following message appears in the xterm used to run Rose:

***** Rose Crashed! please run rreport and provide the log file /var/tmp/roseC* when requested**

The log file will either be placed in:

- `$TMPDIR` (if defined)
- `/var/tmp` (if `$TMPDIR` not defined)

If Rose hangs, you may also produce a traceback log by entering the following `pstack` command:

```
/usr/proc/bin/pstack [hung_process_id] > & pstack_output
```

Submit the traceback log to Rational Technical Support, as described below:

1 **cd** *rational_dir/releases/rose.I.J.K/install*

2 **./rreport**

3 Choose 1: **PROBLEM** for report type:

Select a report type.

>>>> 1: **PROBLEM**

2: **SUGGESTION**

Enter TYPE # (1-2) [1]

4 When asked if you have a additional data files, indicate “y”.

“Do you have additional data files (i.e. traceback log, model, etc.) to include with this report [no]? y“

5 Enter the full path/name of traceback log, when prompted:

“Enter traceback log file path/name: [] /path/name_of_file“

rreport will include as many files as you like. Once you enter the path and file name, then press Enter, you will again be prompted if there are additional files to include. **rreport** will bundle this information with additional information in relation to your server and client, while offering an option to automatically forward this information to Rational Technical Support.

HP-UX

If Rose should crash on HP-UX, the traceback data will display in the xterm which was used to run Rose (i.e.):

% **Caught SIGILL -- traceback follows:**

Stack_Trace: error while unwinding stack

(0) 0x00579e2c segv_handler__Fi + 0x100

[/rose/source/release.ss/ux11.62.release.wrk/l.J.K/hppa_hpux/hp11/bin/rose_exe]

.. ..

Capture the traceback data and forward to Rational Technical Support, along with a description of the Rose features which were being utilized when the crash occurred. See *Preface* on page vii for more information.

If Rose hangs, you may also produce a traceback data by entering the following command:

```
kill -ILL [process id of rose_exe]
```

Contacting Rational Customer Support

Contact Rational Support if you are unable to resolve your problems or if you have questions regarding the installation, use, or maintenance of this Rational Software product. For Rational Support contact information, see *Contacting Rational Technical Support* on page viii.

Installing Releases and Patches Using FTP

7

Rational provides product releases, update releases and patches on our FTP server (<ftp.rational.com>). This chapter describes how to use the FTP server to install products, updates, patches or make a product release tape.

Warning: The information in this chapter does not apply to Beta versions of this release.

The following topics are covered in this section:

- *Getting The FTP Install Script, rinstall* on page 61
- *Install Scenario #1 - Direct Internet Access* on page 63
- *Install Scenario #2 - Indirect Internet Access (UNIX/Linux)* on page 63
- *Install Scenario #3 - Indirect Internet Access (PC)* on page 64
- *Install Scenario #4 - Firewall Access to the Internet* on page 64
- *Installing Patches* on page 66

Getting The FTP Install Script, rinstall

To install a product release using Rational's FTP server, perform the following:

- 1 Rational recommends that you start from an empty directory in the *rational_dir* directory. The **rinstall** program creates files in whatever directory you are. If you start with an empty directory these files are easier to detect.

```
% cd rational_dir
% mkdir tmp
% cd tmp
```

- 2 Get the **rinstall** script from the server using a web browser. You will need internet connectivity to do this.

```
ftp://ftp.rational.com/rinstall
```

Select the rinstall URL and do a **File > Save As...**

Or use the ftp command:

```
ftp ftp.rational.com
```

(login as user ftp. Use your internet E-mail address as the password. for example, ace@company.com)

ftp> get rinstall

ftp> quit

Using a web browser, you must do a **File > Save As...** from the menu bar after selecting rinstall.

The **rinstall** script automates the process of downloading product files from the FTP server. It is a menu-driven script. It lets you select the product you want to install from an up to date list of products that are currently available from the FTP server. The script has a number of settings to allow you to customize its operations.

Each of the menu items is set by entering an alphabetic key. Here is a sample of the **rinstall** menu:

Key	FTP Install Options	Current Settings
---	-----	-----
f)	FTP command:	ftp ftp.rational.com
u)	FTP user:	anonymous
p)	FTP user password:	NEED-TO-SPECIFY
uf)	user FTP command:	none
t)	FTP transfer mode:	N/A
d)	FTP storage directory:	/vendor/rational/tmp
n)	number of retries:	5
rd)	Rational directory:	NEED-TO-SPECIFY
sp)	Select a product to install	
bg)	change to background.	Run in foreground
td)	time delay:	none
r)	reset to factory defaults	
si)	show tracking information	
q)	quit rinstall	

Note: Transfer modes are not applicable to the download of Rational Rose, and selecting one mode over another has no effect on the install.

Install Scenario #1 - Direct Internet Access

The install computer has access to the Internet. You can install a release using the FTP server. Think of the internet and the FTP server as the install device.

Run the **rinstall** script:

```
% sh rinstall
```

or with

```
% chmod a+x rinstall
```

```
% ./rinstall
```

Set the FTP user password to your E-mail address. Set the Rational directory (for example, */vendor/rational*). Select a product to install and follow the instructions given by **rinstall** to complete the install.

Install Scenario #2 - Indirect Internet Access (UNIX/Linux)

The install computer does **not** have access to the Internet. You have a UNIX/Linux computer with a locally attached tape drive. In many cases, the computer you want to install products on does not have access to *ftp.rational.com*. You can use **rinstall** to get all of the product files, defer the install step, and write the files to a tape.

Set the FTP user password. Set the Rational directory to the default. Select the product. Finally, select the *st* key to start the transfer, but defer the install.

As an alternate method, you can make a simple tar tape of the release file (that is, **Rose2002_GA.2002.05.00.\$ARCH.tar.gz**) and include **network_install** script on the tape. This method takes more disk space on the installation computer.

1 Run **rinstall** as described in scenario above.

2 Use the **tar** command to make a *network install* tape.

```
% tar -cvf tape_device network_install release_file_name
```

3 Install the product using the **network_install** tape. It would be best to make a temporary storage directory to do the network install from. Do this on the installation computer:

```
% mkdir rational_dir/tmp
```

```
% cd rational_dir/tmp
```

```
% tar -xvf tape_device
```

```
% ./network_install
```

Follow the instructions given by this script.

Install Scenario #3 - Indirect Internet Access (PC)

The install computer does *not* have access to the internet and you cannot run the **rinstall** script (for example, you have a PC).

You need to get all of the files for a particular product copied over from the FTP server and dump the files to a tape. You need to include the *product.I.J.K.install* script on this tape.

Once you have established an FTP connection to **ftp.rational.com**, follow these instructions:

```
ftp> cd /public/rose/rose2002unix/releases/SYS_TYPE
ftp> prompt
ftp> get product.I.J.K.install
ftp> bin
ftp> get product.I.J.K.tar.gz
ftp> quit
```

Using **tar**, put the two files (*product.I.J.K.tar.gz* and *product.I.J.K.install*) on a tape:

```
% tar -cvf tape_device product.I.J.K.install *tar.gz
```

To extract the release files and begin installation:

```
% tar -xvf tape_device
% sh product.I.J.K.install
```

Install Scenario #4 - Firewall Access to the Internet

The install computer has access to the Internet through a firewall. Assuming your computer gives you access via these steps, you can use **rinstall**:

- Your internet access gateway computer is called *gateway*.
- Your gateway user name is *george*.
- Your gateway password is a secret (shown as *******).
- You need to type the command '**ftp@ftp.rational.com george@company.com**' to get logged into Rational's FTP server.

The top part of the **install** menu shows 4 different settings:

```
Key  FTP Install Options      Current Settings
---  -----
f )  FTP command:            ftp ftp.rational.com
u )  FTP user:                anonymous
p )  FTP user password:      NEED-TO-SPECIFY
uf)  user FTP command:       none
```

The 'f' key is used to set the FTP command:

```
Enter the FTP command to use: [ftp] ftp
Enter the FTP server to use: [ftp.rational.com] gateway
```

The 'u' key is used to set the FTP user at the gateway:

```
Enter the FTP user: [anonymous] ftp@ftp.rational.com
```

The 'uf' key is used to set the user FTP command to login to Rational's FTP computer from your gateway computer. You must set this before setting the password:

```
Enter a user defined FTP command or 0 to clear: []
ftp@ftp.rational.com george@company.com
```

The 'p' key is used to set the FTP user password at the gateway:

```
Enter your complete E-mail address: [] *****
```

Can this be used to send you information via E-mail? no

```
Enter an E-mail address that can: [] george@company.com
```

Now, the top part of the **install** menu will look something like this:

```
Key  FTP Install Options      Current Settings
---  -----
f )  FTP command:            ftp gateway
u )  FTP user:                george
p )  FTP user password:      *****
uf)  user FTP command:       ftp@ftp.rational.com ...
```

All of this is subject to your network administrator. The specific way to use your gateway computer may be different. The **install** program is trying to accommodate a wide range of needs.

Installing Patches

Users can install patches using **rinstall**, a web browser or the **ftp** command. In all cases, you must have an internet connection. Otherwise you will need to request a CD containing the patches through your usual Rational support channel.

Using The **rinstall** Command

It is easiest to use **rinstall**. To do so you must be on a UNIX/Linux computer. You must have an internet connection. All you need to do is select the product for which you want to install one or more patches. Use the 'ip' option when prompted by **rinstall** to install patches only. If the previously installed product is visible from the computer where you run the **rinstall** program it will know if you already have patches installed. It is smart enough to only install the patches you do not have. Otherwise, you can download all of the patches that you do not have. You would need to find out what patches have already been installed by doing the following:

```
% cd rational_dir/releases/rose.I.J.K/bin
% ./rose -info
```

Using A Web Browser

Download the tar.Z file, the inventory file and the install script for each patch you want to install. The patches for Rose are listed in the ftp directory where the release is stored. For example, the Rose patches would be listed in `/public/rose2002unix/releases/sol/Rose2002_GA.2002.05.00.SARCH.GA.patch_info`. This is the file **rinstall** uses to locate patches for a product release. If you download all of these files you can then run the install script for each patch. You must run them in the order they are listed in the file (chronologically). If the product is not visible from the computer where the files are downloaded, move them to such a computer first.

Using The **ftp** Command

This is the same as the web browser approach. You use the UNIX/Linux **ftp** command to log into the ftp.rational.com server as user 'ftp' with your e-mail address as your password. You need to navigate to the various patch directories using the **cd** command inside the **ftp** command. This is not as easy as using a web browser.

Getting Patch Information

You can visit the Rational FTP server to get information about available patches.

To view the current list of available patches, visit the ftp://ftp.rational.com/patch_info/index.html patch information page on our FTP server. From this page you can navigate to the patches you are interested in. There you will find instructions for installing each patch.

Note: The definitive list of patches is located in the product release directory on the FTP server in the file:

`/public/rose2002unix/releases/sol/Rose2002_GA.2002.05.00.$ARCH.GA.patch_info.`

ANY-HOST

A license key issued for ANY-HOST will run on any system, and is not tied to the customer's system ID.

Emergency Key

A temporary key that lets a customer use Rational software for a fixed period of time if they cannot use their own license for some reason. The duration of the Emergency Key is 5 days. Emergency Keys can be node-locked or floating. Emergency Keys are distributed by the Licensing Support Group and will run on any host.

Evaluation Key

A temporary key that lets a customer use and evaluate Rational software for a fixed period of time. The product Business Unit determines the duration of the Evaluation Key. Evaluation Keys can be node-locked or floating. Evaluation Keys are distributed by the Sales team and will run on any host.

Floating License

A license type that links products to a License Server system. Client systems access licenses on the License Server system when they need to run a copy of Rational software. Multiple clients can share the pool of floating licenses; one license is granted per client per product. Floating Licenses on License Servers are typically administered by System Administrators.

GLOBEtrotter FLEXIm Server

Software license manager for Windows, NT, UNIX, Linux, Java, and VMS.

Key Type

Both node-locked and floating licenses can be enforced by different types of license keys. The types of license keys are Startup and Permanent. Evaluation and Emergency keys are variations of Startup keys. These keys are issued by different groups (i.e., Sales, Order Entry, License Support, Tech Support, License Support) at different times, for different purposes, and governed under different business rules and policies.

License

A legal right to use a product. A customer receives a license when they purchase the product. However, they need a License Key to actually associate the product and the system on which it is running with a license.

License Key

Generic term used in this document to describe keys that enable licenses on a customer system. The types of License Keys are: permanent, startup, evaluation, emergency, and Term License Agreement (TLA).

License Key Administrator

A Windows program written by Rational Software, which provides a customer interface to Rational's Licensing system. Similar functionality exists with a subset of the **rs_install** command, called **license_setup**. Starting with the release of Rational Suite 1.0 and associated point products, the License Key Administrator or **license_setup** command is installed whenever a Rational software product is installed. For hosting floating licenses on Windows NT, the License Key Administrator is installed when the Globetrotter FLEXlm server is installed on a Windows NT License Server system.

License Key Code

An encrypted code used to enforce a license agreement.

License Type

The valid types of licenses are node-locked licenses and floating licenses.

Node-Locked License

A type of license that links a product to a system. Typically, one node-locked license is issued per software copy, but exceptions can be made if a user needs to run a single copy of the software on two systems. Contact Licensing Customer Support for information on this exception.

Permanent Key

A license issued to a customer for running Rational products. Permanent licenses are keyed to a product and system. Permanent Keys have expiration dates that vary by product, but will probably be two product cycles. Permanent Keys can be node-locked or floating. Node-locked Permanent Keys are installed on a client system. Floating Permanent Keys are installed on a License Server system. The Rational BackOffice issues Permanent Keys.

Permanent Key Code

The FLEXIm encrypted code that lets a customer run a particular Rational product using a Permanent Key. It is valid until the expiration date for that key.

Startup Key

A short-term license key that lets a customer run Rational software products. Startup licenses are not keyed to a specific system. Startup Keys can be node-locked or floating. Node-locked Startup Keys are installed on a client system. Floating Startup Keys are installed on a License Server system. Startup Keys are issued by the Rational BackOffice and will run on any host until the specified expiration date.

Startup Key Code

The FLEXIm encrypted code that temporarily lets a customer run a particular Rational product using a Startup Key.

Startup License Key Certificate

A piece of paper or electronic file that contains information a customer needs to begin using Rational software with a license. The Startup License Key Certificate is shipped to the customer with the software installation media.

Term License Agreements (TLAs)

Variations of a Permanent Key. TLAs are issued to a site to let their employees use Rational software for a negotiated period of time. TLAs are issued by Rational Sales and have an expiration date.

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