Rational® ClearCase® LT

Installation Guide

VERSION: 2003.06.00 AND LATER

PART NUMBER: CT2TLNA, S126-5678-00

UNIX EDITION
SOLARIS 2.6, 7, 8, 9
HP-UX 11.0, 11.0 ACE, 11.11
IBM AIX 4.3.3, 5.1, 5.2
RED HAT LINUX 7.2, 7.3, 8.0, 9 FOR X86
RED HAT ENTERPRISE LINUX 2.1, 3 FOR X86|
SUSE LINUX STANDARD SERVER 8 FOR X86
SUSE LINUX ENTERPRISE SERVER 8 FOR X86

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Preface

About This Manual

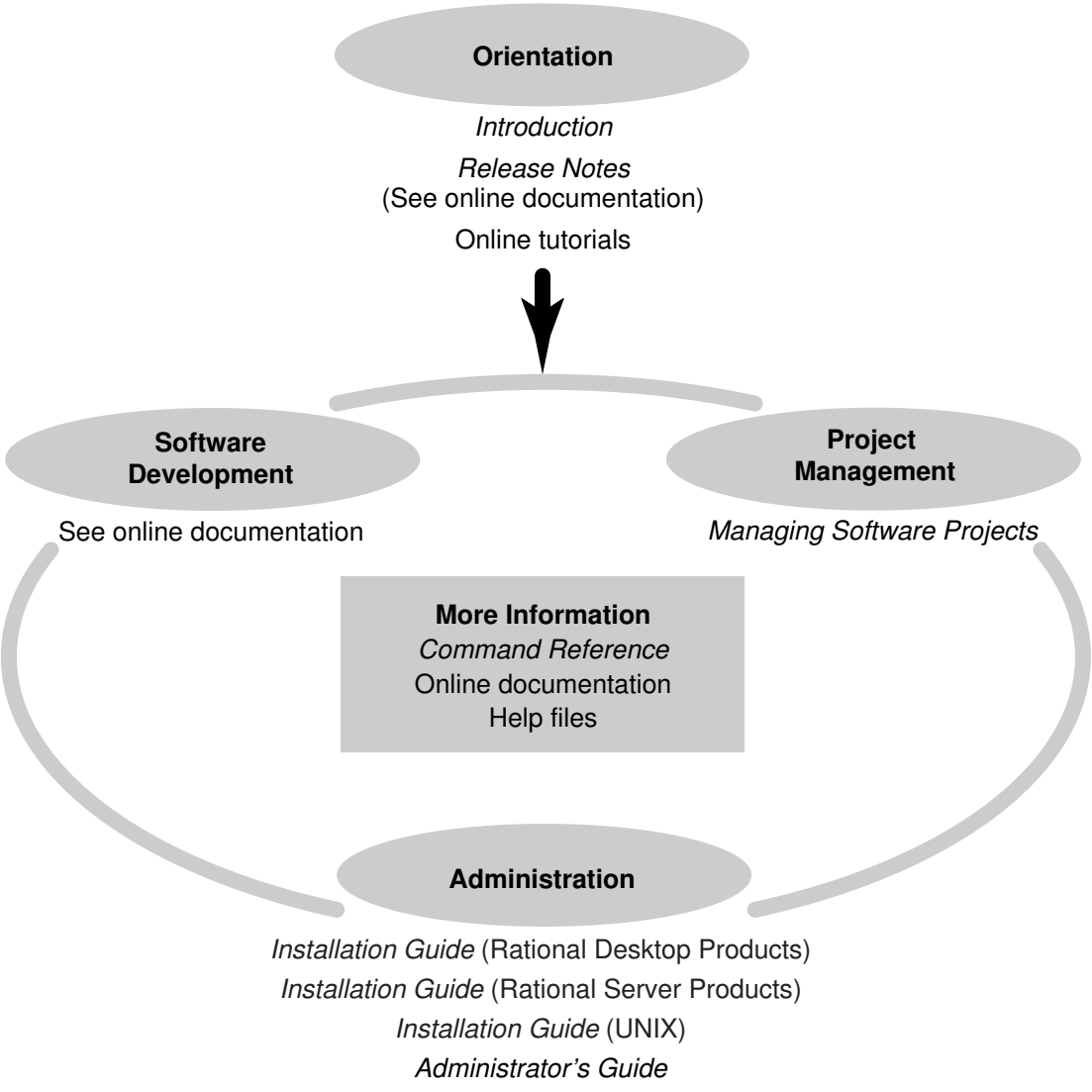
This manual provides detailed instructions for installing Rational ClearCase LT on UNIX computers.

The basic procedure for installing ClearCase LT includes these steps:

1. Copy the software from the release media (CD) to a networkwide release area.
2. Customize the release area with local settings.
3. Install and configure the Rational license server, if needed.
4. Acquire license keys from Rational and install them on the Rational license server.
5. Designate a computer as the ClearCase LT server and establish any other networkwide resources that you need.
6. Install and configure the ClearCase LT server.
7. Install the ClearCase LT clients.

Chapter 1 presents prerequisites for installation. Chapter 2 explains steps 1 and 2 of this process. Chapter 3 explains steps 3 and 4. Chapter 4 explains how to perform steps 5 through 7.

ClearCase LT Documentation Roadmap



Typographical Conventions

This manual uses the following typographical conventions:

- *ccase-home-dir* represents the directory into which the ClearCase Product Family has been installed. By default, this directory is /opt/rational/clearcase on UNIX and C:\Program Files\Rational\ClearCase on Windows.
- *cquest-home-dir* represents the directory into which Rational ClearQuest has been installed. By default, this directory is /opt/rational/clearquest on UNIX and C:\Program Files\Rational\ClearQuest on Windows.
- **Bold** is used for names the user can enter; for example, command names and branch names.
- A sans-serif font is used for file names, directory names, and file extensions.
- **A sans-serif bold font** is used for GUI elements; for example, menu names and names of check boxes.
- *Italic* is used for variables, document titles, glossary terms, and emphasis.
- `A monospaced font` is used for examples. Where user input needs to be distinguished from program output, **bold** is used for user input.
- Nonprinting characters appear as follows: <EOF>, <NL>.
- Key names and key combinations are capitalized and appear as follows: SHIFT, CTRL+G.
- [ ] Brackets enclose optional items in format and syntax descriptions.
- { } Braces enclose a list from which you must choose an item in format and syntax descriptions.
- | A vertical bar separates items in a list of choices.
- ... In a syntax description, an ellipsis indicates you can repeat the preceding item or line one or more times. Otherwise, it can indicate omitted information.

  Note: In certain contexts, you can use "**...**" within a pathname as a wildcard, similar to "*" or "?". For more information, see the **wildcards_ccase** reference page.
- If a command or option name has a short form, a "medial dot" (·) character indicates the shortest legal abbreviation. For example:

  lsc·heckout

Online Documentation

The ClearCase Product Family (CPF) includes online documentation, as follows:

Help System: Use the **Help** menu, the **Help** button, or the F1 key. To display the contents of the online documentation set, do one of the following:

- On UNIX, type **cleartool man contents**
- On Windows, click **Start > Programs > Rational Software > Rational ClearCase > Help**
- On either platform, to display contents for Rational ClearCase MultiSite, type **multitool man contents**
- Use the **Help** button in a dialog box to display information about that dialog box or press F1.

Reference Pages: Use the **cleartool man** and **multitool man** commands. For more information, see the **man** reference page.

Command Syntax: Use the **–help** command option or the **cleartool help** command.

Tutorial: Provides a step-by-step tour of important features of the product. To start the tutorial, do one of the following:

- On UNIX, type **cleartool man tutorial**
- On Windows, click **Start > Programs > Rational Software > Rational ClearCase > ClearCase Tutorial**

PDF Manuals: Navigate to:

- On UNIX, *ccase-home-dir*/doc/books
- On Windows, *ccase-home-dir*\doc\books

Customer Support

If you have any problems with the software or documentation, contact Rational Customer Support by telephone or fax. You can find information about support hours, languages spoken, or other support information at www.ibm.com/software/rational/support/.

Your location	Telephone	Facsimile
Asia Pacific	61-2-9419-0111 Australia	61-2-9419-0123 Australia
Europe, Middle East, and Africa	+31-(0)20-4546-200 Netherlands	+31-(0)20-4546-201 Netherlands

Latin America and Mexico	+1-408-863-4000 Cupertino, CA	Use either location +1-408-863-4194 Cupertino, CA +1-781-676-2460 Lexington, MA
United States and Canada	1-800-IBM-SERV	Use either location +1-408-863-4194 Cupertino, CA +1-781-676-2460 Lexington, MA

Before You Install 1

This chapter presents hardware and software installation requirements and other platform-related information. Read this chapter before you install Rational ClearCase LT.

Hardware and Software Requirements

This section lists the basic platform, hardware, and software requirements for running ClearCase LT software.

Supported Platforms

ClearCase LT runs on the platforms listed in Table 1.

Table 1 Supported Platforms for ClearCase LT Version 2003.06.00

Hardware platform	Operating system
Solaris SPARC	Solaris 2.6,7,8,9 (2.6 32-bit only, others 32- and 64- bit)
HP 9000 Series 700 and Series 800	HP-UX 11.0, 11.0 ACE and 11.11 (11i version 1.0). Supported HP-UX ACE release is November 1999 ACE. (32- and 64-bit support for all 11.x releases)
IBM RS/6000	AIX 4.3.3, 5.1, 5.2
IBM PC-compatibles	Red Hat Linux 7.2, 7.3, 8.0, 9 Red Hat Enterprise Linux 2.1, 3 SuSE Linux Standard Server 8 SuSE Linux Enterprise Server 8

For more information about differences in features and functionality by platform, see the *Platforms Guide* in the Help.

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Supported Platforms for ClearCase Web Servers and Web Interface

The following platforms support the ClearCase Web Server:

- Solaris SPARC
- HP-UX
- AIX
- Linux for x86

All supported ClearCase LT platforms support the Web interface. For details about the supported Web servers and Web browsers supported on different platforms, see *Basic Software Requirements* on page 5.

Supported File Systems

Table 2 lists the file systems that ClearCase LT supports for view and VOB storage. If a file system does not appear in the table, it is not supported. Inform Rational Customer Support or your sales representative of any concerns you have about this list.

For information about support of NFS implementations, see *NFS Support*.

Table 2 Supported File Systems by Platform

Platform	Supported file systems
Solaris SPARC	UFS, VxFS (Veritas)
HP-UX	JFS, UFS, HFS, VxFS
IBM AIX	JFS
Linux for x86	ext2, ext3, reiserfs

The following file systems cannot be used to store any ClearCase LT data on any platform:

- Andrew File System (AFS), DCE Distributed File System (DFS)
- Any memory-based file system (such as memFS, tmpFS, swapFS)

NFS Support

Third-party automounters are not supported on any platform. For a given platform, we support the NFS implementations that the platform supports.

If you use non-ClearCase access, see the *Administrator's Guide* for Rational ClearCase for a description of the limitations associated with use of NFS and potential workarounds.

Hardware Requirements

This section describes hardware requirements for installing and runningClearCase LT Server and ClearCase LT Client software.

Basic Hardware Requirements

For ClearCase client hosts:

- 32 MB main memory
- 300 MB disk space

For ClearCase server hosts:

- 64 MB memory
- 2 GB disk space
- 128 UNIX processes
- 600 UNIX file descriptors per host (not per process)

Note: UNIX processes and UNIX file descriptors per host are set as kernel parameters.

Disk Space Requirements for the Release Area

The file system of the networkwide release host must have sufficient disk space to hold the release area. The following list shows the minimum disk space required for release areas on different platforms:

Platform	Required Disk Space (MB)
Solaris SPARC	340
HP-UX 11	364
IBM AIX	200
Linux for x86	310 MB

Disk Space Requirements for Individual Hosts

Table 3 shows the disk space requirement for each kind of installation. All the space must be contained in a single disk partition.

Table 3 Disk Space Requirements for ClearCase LT Release

Platform	Type of installation	Required Disk Space (MB)
Solaris SPARC	Full copy	277
	Standard	123
HP-UX 11	Full copy	302
	Standard	146
IBM AIX	Full copy	272 MB
	Standard	131 MB
Linux for x86 client	Full copy	192 MB
	Standard	42 MB
Linux for x86 server	Full copy	220 MB
	Standard	54 MB
All Platforms	Link	Less than 2[1] (install of ClearCase LT Client and Server)
	Mounted	Less than 2[1] (install of ClearCase LT Client and Server)

1. Disk space requirements for Link and Mounted installations represent the space required for items loaded in the /var/adm/rational directory.

In addition, any host that will have view directories needs enough disk space to contain all files loaded into the views and all view-private files added to the views. The amount of space required depends on the number and sizes of the files in the views.

The ClearCase LT server must have enough disk space to contain the files and databases used for storage of VOB storage or view storage directories. The amount of space required depends on the characteristics and use of the VOBs and views.

Basic Software Requirements

Unless they use the command-line interface exclusively, ClearCase LT users on HP-UX and Solaris systems require Netscape 7. You must install the Sun 1.4.2 JVM or the HP 1.4.1.01 JVM. Check to ensure that there are no mismatched versions of the JPI and JRE, as this situation can can problems with the ClearCase Web interface. On AIX and Linux for x86 systems, Mozilla 1.4 is required.

To read online manuals in PDF format, users require Adobe Acrobat Reader, version 4.0 or later.

Platform-Specific Information Relating to Installation

This section provides information that varies from platform to platform.

You can find up-to-date information on operating system patches at the vendor Web sites listed in Table 4.

Table 4 Web Sites of Operating System Vendors

Vendor	URL[1]
Sun	sunsolve.sun.com
Hewlett-Packard	us-support.external.hp.com
IBM	ibm.com/support/us
Red Hat	www.redhat.com/apps/support/
SuSE	www.suse.de/us/private/support/index.html

1. Where support is regional, U.S. links are shown. Outside the U.S., choose your geographical region.

Layered Software Packages

In some cases, correct ClearCase processing requires installation of a layered software package. Before installing ClearCase on a host, see Table 6 to determine whether you need to install any such packages.

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Table 5 Layered Software Packages Required by ClearCase

Host type	Package name	Description Solaris SPARC
SUNWsprot	SPARCompilers, bundled tools; includes defaultmake.rules file	SUNWbcp
Binary compatibility	SUNWscpr	Source compatibility, root

Table 6 Layered Software Packages

Host type	Package name	Description
Solaris SPARC	SUNWsprot	SPARC compilers, bundled tools; includes default make.rules file
	SUNWbcp	Binary compatibility
	SUNWscpr	Source compatibility, root
	SUNWscpu	Source compatibility, user
	SUNWmfrun	Motif RunTime kit to run ClearCase GUIs
HP-UX 11	Upgrade. UPG-TLINK	Compatibility links for file system
	XWindow System: X11R6 (or later)	Window system

ClearCase LT Patches Incorporated in This Release

ClearCase LT 2003.06.00 incorporates all ClearCase patches distributed since the release of ClearCase LT Version 2002.05.00. Table 7 shows the specific ClearCase patches.

Table 7 ClearCase LT Patches Incorporated in This Release

Patch stream	Last patch incorporated
ClearCase 4.2	clearcase_lt_p4.2-12
ClearCase 2002.05.00	clearcase_lt_p2002.05.00-8

Upgrading from a Previous Release

This section discusses issues involved in upgrading from a previous version of ClearCase LT.

Here is some general information to keep in mind:

- Make sure that all views and VOBs are fully backed up. For information about backing up VOBs and views, see the *Administrator's Guide* for Rational ClearCase and ClearCase LT.
- You do not need to upgrade your license server or get new ClearCase licenses. Licenses work with any version of ClearCase product family software.
- Upgrade VOB and view servers before you upgrade client hosts; Version 2002.05.20 clients and later cannot access VOBs or views on hosts that are running an earlier release of ClearCase.
- Back up the installation directory.
- Complete all deliver operations that are in progress before you upgrade to a new ClearCase release.

Default Installation Directory

You do not need to remove the previous version of ClearCase unless you have installed the earlier version in a nondefault location and want to change the location of the ClearCase installation directory.

In Version 2003.06.00, the default installation directory for ClearCase changed from /usr/atria to /opt/rational/clearcase. You do not need to uninstall the previous version of ClearCase and cannot specify /usr/atria as an alternate install location. This requirement is necessary to preserve backward compatibility of use scripts.

If you specify a nondefault installation directory, the directory /opt/rational/clearcase is created as a symbolic link to that directory.

Feature Levels

See the *Release Notes* for information about any change in feature levels.

Evaluating This Release of ClearCase

To evaluate Version 2003.06.00, you can install it on one or more test systems in your existing environment of servers, clients, views, and VOBs and configure the test systems to use your Version 2002.05.00 license server.

Installation of the UCM Integration with Rational ClearQuest

To use the UCM integration with Rational ClearQuest, take into account the following issues with the compatibility and version support of the following elements:

- ClearCase version (client and server)
- ClearQuest version
- UCM schema package
- ClearQuest metaschema feature level

Table 8 shows the compatibility of different releases of ClearCase and ClearQuest, the UCM package revision number, and the ClearQuest database feature level.

Table 8 Supported Integrations Between ClearCase (Using UCM) and ClearQuest

ClearCase version	ClearQuest version	UCM Package revision number	ClearQuest Database feature level
4.2	2001A.04.00 2001A.04.20 2002.05.00 2003.06.00	2,0, 3.0, 4.0	3, 5
2002.05.00	2001A.04.00 2001A.04.20 2002.05.00 2003.06.00	2,0, 3.0, 4.0	3, 5
2003.06.00	2001A.04.00 2001A.04.20 2002.05.00	2,0, 3.0, 4.0	3, 5

Table 8 Supported Integrations Between ClearCase (Using UCM) and ClearQuest

ClearCase version	ClearQuest version	UCM Package revision number	ClearQuest Database feature level
2003.06.00	2003.06.00	2.0, 3.0, 4.0, 5.0	3, 5

The upgrade procedure that follows is supported on HP-UX, Solaris, and AIX.

1 Upgrade either ClearQuest or ClearCase (client), or upgrade both ClearQuest and ClearCase (client) simultaneously.

Note: ClearCase client upgrade is dependent on ClearCase server upgrades.

2 Upgrade your UCM-enabled ClearQuest schema with the new version of the UnifiedChangeManagement package.

Note: To use UnifiedChangeManagement Package Revision 5.0, make sure that your ClearCase installation is upgraded to 2003.06.00.

UnifiedChangeManagement Package Revision 5.0, is dependent on AMStateTypes 1.0 and UCMPolicy Scripts 3.0 packages.

3 Upgrade your ClearQuest user database to the new version of the schema.

Configuring ClearCase LT Licensing

2

This chapter explains licensing tasks for installing Rational ClearCase LT as a new point product.

Rational ClearCase LT uses Rational Common Licensing, a model based on the FLEXlm license management tool from GLOBEtrotter Software, Inc. It requires Rational Suite or ClearCase LT licenses to run ClearCase LT programs or issue ClearCase LT commands.

Licenses are usually set up when a Rational Suite product is installed, as described in Rational Suite documentation. If that is the case, you can skip this chapter. If you are adding ClearCase LT as a new point product to your system, you must request new license keys for it. You cannot use the existing suite licenses for new point product installations.

To configure ClearCase LT licensing, you must first determine the type of licenses you will use:

- **Node-locked licenses.** If you choose node-locked licenses, you must specify in the license map file that ClearCase LT is to use the Rational Suite license keys. Rational does not provide a stand-alone node-locked license for ClearCase LT. For information about modifying settings in the license map file, see *Customizing the Order in Which Licenses Are Requested* on page 20.
- **Floating licenses.** If you choose floating licenses, you must set up a license server to control the use of the licenses. After a period of inactivity by a ClearCase LT user, the user's license may be taken by another user. For information about setting up a license server, see *Using license_setup* on page 13.

You must also choose between temporary licenses and permanent licenses:

- **Temporary licenses.** Startup, temporary, or evaluation licenses are provided on the Rational License Key Certificate included with your product's release media.
- **Permanent licenses.** Permanent or Term License Agreement (TLA) licenses can be obtained from the Rational AccountLink Web site or by fax, if you do not have Internet access. For information about using AccountLink, see *Using AccountLink* on page 12.

This following sections explain these licensing procedures:

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- To acquire licenses for ClearCase LT from the AccountLink Web site, see *Using AccountLink* on page 12.
- To set up a license server host, see *Using license_setup* on page 13.
- To install permanent or temporary license keys on a new or existing license server host, see *Licensing Options* on page 16.
- To administer licenses, see *Administering Licenses* on page 18.

Using AccountLink

The AccountLink Web site, www.rational.com/accountlink, simplifies the process of obtaining license keys for ClearCase LT and other Rational products. To use AccountLink, gather the information you need to fill out the license request form; then use any Web browser to access the AccountLink Web site.

Note: If you are using a temporary or evaluation license key, you can skip this section.

Information You Need for AccountLink

In addition to contact information, you must provide the account and product information summarized in Table 9 to obtain a file containing ClearCase LT license keys. You can use the blank third column to record information for your site that you will need to obtain a license file.

Table 9 AccountLink Information (Part 1 of 2)

Data	Notes	Your entry
Your Rational account number	Source: Your Rational license key certificate.	
License type	Floating for ClearCase LT licenses; floating or node-locked for Suite licenses	
Rational product line	ClearCase LT is part of the ClearCase product line.	**CLEARCASE**
Product name	Source: your Rational license key certificate.	**Rational ClearCase LT**
Quantity	Source: your Rational license key certificate. This is the number of licenses that you have purchased.	

Table 9 AccountLink Information (Part 2 of 2)

Data	Notes	Your entry
Host name and host ID	This is the name and host ID of the server machine for floating licenses or the machine on which ClearCase LT will be used for node-locked licenses. If the license server host is different from the installation machine, you must have remote shell access from the installation machine to the license server host. In addition, the installation directory must be accessible from the license server host. If you do not know the host ID of your license server host, download the tool **gethostinfo.sh** from AccountLink, and run it on the computer that will be your license server host.	

When the process is complete, you will receive a file named license_for_*server name*.upd by e-mail.

If you have chosen to use floating licences, you must run **license_setup** to set up a license server.

Using license_setup

After you obtain your licenses, you can run **license_setup** to install them on an existing license server or set up a new license server host to which you can then add the licenses.

Note: In this document, the pathname where the license server is installed is referred to as *rational_dir*.

Information You Need for license_setup

When setting up a new license server host or adding licenses to an existing license server, you will need the information in Table 10 before you run **license_setup**.

Table 10 License Request Information (Part 1 of 2)

Data	Notes	Your Entry
Host name or IP address of the computer on which the license server is to run	If this computer (the license server host), is different from the installation host, you must have remote shell access from the installation machine to the license server host. In addition, the installation directory must be accessible from the license server host.	
License server port number	Default is 27000. This is the port at which the license server listens for license requests. This port number must not be in use by any other application on the license server host. Use **ypcat** to list ports in use on a host, or look in /etc/services.	
Pathname of installation directory	If you are installing a Rational License server, this is the directory in which you will install Rational Common Licensing software. If you are using an existing Rational License server, this is the pathname under which the server is installed.	
Pathname of license file	The installation program will suggest a default for a new license file. If you want to use an existing license file, enter its full pathname instead of the default.	
License keys for each product you are installing OR Full pathname of the .upd file to import licenses from	Source: Your Rational license key certificate (temporary or evaluation keys) OR Rational AccountLink (.upd file with permanent or TLA keys).	
License key type	Source: Your Rational license key certificate. Must be permanent, TLA, startup, or evaluation. **Note:** To enter the permanent license key after you have been using a startup or evaluation license, see *Replacing Temporary License Keys with Permanent License Keys* on page 17.	

Table 10 License Request Information (Part 2 of 2)

Data	Notes	Your Entry
License quantity	Source: Your Rational license key certificate. (Note that **0**=uncounted.)	
License expiration date	If you have a permanent license, enter **p**. Source for other license types: Your Rational license key certificate or an e-mail message from Rational Software. If you have a startup or evaluation license, enter the date in the *dd-mm-yyyy* format. (The field is not case-sensitive.)	
User IDs for everyone who will be using ClearCase LT (optional)	You can use the Rational Common Licensing options file to provide tighter control over which users and groups can acquire licenses. If you do not want to exercise this level of control, **license_setup** will populate the file with "dummy" names, one for each license you have purchased, and all users will be able to acquire licenses.	

If you are going to set up a new Rational License Server, select an appropriate host computer first.

Selecting a Computer to Be the License Server Host

When selecting a license server host, choose a computer with these characteristics:

- Is highly available and infrequently rebooted
- Is accessible over the network by all ClearCase LT hosts. Only network access, as verified by a UNIX command like **ping**, is needed when a client requests a license. The ability to access the license server host's file system is not required for any purpose other than adding new licenses to the host.

Because ClearCase LT does not need to run on the license server host, you can select any computer that satisfies these requirements. If the license server host has an architecture that ClearCase LT supports, you can also install ClearCase LT software there. You can designate the ClearCase LT server as the license server host; however, handling this task may affect the performance of VOB and view access on the server if it must serve licenses for more than about 50 ClearCase LT users.

Running license_setup

The **license_setup** program is included as part of the ClearCase LT /install directory under the release area.

To run **license_setup**:

1. Log on to the computer you have chosen to be the license server host. Log on as an ordinary user who has rights to create files in the directory where you intend to install the Rational License Server. Do not log on as **root**. Installing the Rational License Server while you are logged in as **root** causes the Rational License Server processes to run as **root**, which is not necessary and can pose a security risk.
2. Go to the **install** subdirectory within networkwide release area for the appropriate architecture:

   # **cd /net/bigserver/usr/clearcaseLT_rls** *(typical release area)*

   # **cd sun5/clearcase/install** *(architecture-specific location within release area)*

   For a list of supported architectures and their abbreviations, see *Architecture Mnemonics and mount Commands* on page 24.
3. Run the **license_setup** program:

   ./license_setup

The **license_setup** program confirms the location of the installation directory (*rational_dir* in our examples), then presents the **Licensing Options** menu.

Licensing Options

The **license_setup** program supports three licensing options:

- Use of an existing Rational License Server or license file
- Setting up a permanent or TLA license file and server
- Setting up a temporary (evaluation or startup) license file

Whichever option you select, **license_setup** prompts you through the installation, providing detailed instructions along with default choices. The defaults appear in brackets, for example, `[2]`. To accept a default, press RETURN.

Using an Existing License File

Select this option if you already have an existing license file for version 2000.02.10 or later of Rational Suite DevelopmentStudio. Selecting this option does not upgrade the license server software.

Setting Up a Permanent or TLA License File and Server

Select this option to do either of the following:

- To install a Rational License Server and then import a new license file obtained from AccountLink or by fax
- To import a new license file to an existing Rational License Server

Setting Up a Temporary License File

Select this option if you are using temporary or evaluation licenses. The license key and related information are provided on the Rational License Key Certificate, which is included with your product's release media.

Connecting to a Different License Server

On client installations, you can change the license server you are using by following these steps. It is not necessary to reinstall ClearCase LT.

1. Change the entry in /var/adm/rational/clearcase/config/flexlm_host to name the new license server.
2. Delete the file /.flexlmrc in your home directory.

Replacing Temporary License Keys with Permanent License Keys

If you have installed a temporary, startup, or evaluation license, you must install permanent licenses to continue using the product. To install permanent licenses, use AccountLink to request the permanent license keys; then run **license_setup** and specify option 2.

Common Questions About license_setup

This section contains answers to some common questions about the **license_setup** program.

Can I rerun parts of the installation?

Yes. You can rerun **license_setup** any time you need to add or change licenses. You can also run the **license_check** program separately to validate the license you already have. **license_check** is installed in the same directory as **license_setup**.

Do I have to reenter my license server information each time I install a product?

No. You enter this information only once. The **license_setup** program saves the information you enter about yourself and about the host to be used as the license server for ClearCase LT licenses in two text files in the *rational_dir***/config/defaults** directory: **license_setup.***username*, which contains information about you and your license server, and **rs_install.CCLT.***release-number.username* , which records product-specific information for ClearCase LT. The **license_setup** program reports the location of these files when you quit the program. The next time you run **license_setup**, the program uses the saved configuration information.

Do I need to install all my licenses on one server?

No. You may spread your licenses out over several servers, as long as each client is configured to know which server to contact when requesting a license.

Which type of product license key should I install?

If you already have your permanent license key, you can install it right away. If you do not, you must obtain a permanent key from AccountLink as described in *Using AccountLink* on page 12 or use the temporary key on your Rational License Key Certificate. To ensure uninterrupted use of ClearCase LT, install your permanent license key as soon as possible.

Administering Licenses

This section contains brief information about using the license manager and customizing license usage order. For more information, see the *Installation Guide* for Rational Server Products.

Using the License Manager

The Rational License Manager monitors license access, simultaneous use, idle time, and so on. It includes the following components:

- A vendor daemon named **rational** that dispenses ClearCase LT licenses. The **rational** daemon is used for all licensed Rational Software products.
- A license manager daemon named **lmgrd**. The **lmgrd** daemon does not process requests on its own, but forwards requests to the appropriate vendor daemon.
- A license file that you maintain.

Verifying That Rational Common Licensing Is Working

After you install your license key, the **license_setup** program reminds you that you must configure your license host to restart the license server whenever it reboots. The **license_setup** program gives you instructions for doing this.

To verify that Rational Common Licensing is operational and that the daemons are running, type either of the following commands on your license server:

 # ps axw | grep -v grep | egrep "lmgrd|rational"
 # ps -e | grep -v grep | egrep "lmgrd|rational"

The output should include lines similar to the following sample output (your pathnames will vary):

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

Using Rational Common Licensing Commands

The Rational License Manager supports the following commands for system administration:

Command	Purpose
lmdiag	Diagnose problems when you cannot check out a license
lmdown	Shut down the license and vendor daemons
lmhostid	Report the license manager host ID of a workstation
lmreread	Reread the license file and start new vendor daemons
lmstat	Report status on daemons and features used
exinstal	Report on licenses in the license file you specify on the command line

Customizing the Order in Which Licenses Are Requested

By default, a Rational product requests licenses in this order:

1. A node-locked license before a floating license
2. A suite license before a point-product license

For example, ClearCase LT is sold as part of Rational Suite and as a stand-alone product. It requests the suite license before it requests a ClearCase LT license. If a node-locked license is available among the group of suite licenses, it claims that license.

You can customize the order in which licenses are requested in the License_Map file on a per-product basis.

License Map File

A default **License_Map** file is created and stored in the config/ subdirectory when you install a Rational Suite product. The file is initially set to claim a suite license for all products. It contains lines of the following format:

```
component_designator product_designator {, product_designator}
```

For ClearCase LT, the initial setting should be similar to this:

```
ClearCase_LT:1.0 DevelopmentStudioUNIX:1.0, standalone
```

This line tells the ClearCase LT license client to first request a Rational Suite DevelopmentStudio license. If a Rational Suite DevelopmentStudio license is unavailable, the client requests a stand-alone ClearCase LT license. Depending on the suite product you install, the line you see may differ from the example in this book.

You can modify the settings to customize license use for all users or for individual users.

Run the user setup script (such as **rs_setup.csh** or **rs_setup.ksh**) to verify that the environment variable, RSU_LICENSE_MAP_ENV, is set. This environment variable is needed to find the License_Map file to be used. If the environment variable is not set, the setup script sets the pathname to the default license map file. For example, config/License_Map.

Setting Up a Release Area

3

Rational ClearCase LT is distributed as part of a merged *release area*, which includes executables for the ClearCase LT server, ClearCase LT clients, and Rational Common Licensing server software. This chapter presents both background information and detailed installation instructions for creating this release area on a host in your network and preparing for installation of ClearCase LT.

Selecting a Networkwide Release Host

One host in the network acts as the *release host*, accommodating a release area that provides online storage for the ClearCase LT distribution: executable files, configuration files, online documentation, and so on. This host is essentially a file server for ClearCase LT hosts during installation and, usually, during normal operation. When selecting a release host, choose a computer with these characteristics:

- Is highly available and infrequently rebooted
- Can provide fast file system access
- Is accessible over the network to all ClearCase LT hosts

Because ClearCase LT does not need to run on the release host, you can select any computer that satisfies these requirements. If the release host has an architecture that ClearCase LT supports, you can also install ClearCase LT software there. You can designate the ClearCase LT server as the networkwide release host; however, handling this task may affect the performance of ClearCase VOB and view access on the server if certain installation models are selected (see *Installation Methods and Models* on page 35).

Platform-Specific Information

This section presents platform-specific information you will need while creating a release area.

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Architecture Mnemonics and mount Commands

Table 11 provides the architecture mnemonic and sample CD **mount** commands for supported platforms. The architecture mnemonic is used as the name of root of the release area for each platform or set of platforms.

Table 11 Mounting the CD

Architecture	Mnemonic	Sample mount command
Solaris SPARC	**sun5**	Not necessary if Volume Manager is in use
HP-UX 11	**hp11_pa**[1]	**mount -F cdfs -r /dev/dsk/c3d0s2 /cdrom**
IBM AIX	aix4_power	**mount -o ro -v cdrfs /dev/cd0 /cdrom**
Linux for x86	**rhat_x86**	**mount -r /dev/cdrom /mnt/cdrom**[2]

1. When installing ClearCase LT on an individual host, you must use the appropriate release area for the architecture on your host. For example, if you have HP-UX 11 on your host, you must install from the hp11_pa release area.
2. The CD drive may not be mountable from a Linux image running under VM. In that case, use a CD drive on another computer accessible over the network and mount that drive from the Linux image VM

Exporting the Release Area

Setting up the export is architecture specific; see Table 12. For details, see the standard reference pages for these files and programs.

Table 12 Exporting the ClearCase LT Release Area (Part 1 of 2)

Architecture	Steps to export ClearCase LT release area
Solaris SPARC	1. Revise /etc/dfs/dfstab: **share -F nfs /usr/clearcase_rls options**
	2. Enter command: # **/usr/sbin/shareall -F NFS**
HP-UX 11	1. Revise /**etc/exports**: **/usr/clearcase_rls options**
	2. Enter command: # **/usr/sbin/exportfs -a other-options**

Table 12 Exporting the ClearCase LT Release Area (Part 2 of 2)

Architecture	Steps to export ClearCase LT release area
IBM AIX	1. Revise **/etc/exports**: **/usr/clearcase_rls** *options*
	2. Enter command: **/usr/sbin/exportfs -a** *other_options*
Linux for x86	Revise /etc/exports: **/usr/clearcase_rls (rw)**

Setting Up the Networkwide Release Host

Setting up the release host involves these tasks:

1. Identifying a location for the new release area.
2. Ensuring that other ClearCase LT hosts in the network can access the files. See *Step Two: Ensure That the Release Area Is Accessible to All Hosts* on page 26.
3. Loading files from the ClearCase LT product distribution media onto the release host's file system. See *Step Three: Load the Software Distribution from CD* on page 26.
4. Running the site_prep script. This sets the ownership and access modes of release area files and defines values for other parameters. See *Step Four: Run the site_prep Script* on page 27.
5. Verifying **site_prep** selections.
6. Publicizing the location of the release area.

Step One: Identify a Location for the New Release Area

1. Log on as **root** to the machine you will use as the networkwide release host.
2. Decide where to create the ClearCase LT product release area, into which you will load the contents of the product distribution medium. You must select a location in a file system that can be NFS-mounted by all prospective ClearCase LT hosts. The ClearCase LT server must not mount the release-area file system with the **nosuid** option. This option prevents use of the **reformatvob** command if the server is link-installed.

   The file system must have sufficient disk space to hold the release area. See *Disk Space Requirements for ClearCase LT Release* on page 4 for specific information.

Note: This document assumes that you locate the release area in /usr/clearcaseLT_rls. If you choose another location (for example, /opt/ccase_lt_rls), modify the commands listed for subsequent steps accordingly. Do not use the name /opt/rational/clearcase for the release area. This name is reserved (but not required) for the directory where ClearCase LT software is installed on individual hosts. ClearCase LT documentation refers to the installation directory as *ccase-home-dir*.

Step Two: Ensure That the Release Area Is Accessible to All Hosts

Verify that the release host exports the directory /usr/clearcaseLT_lt_rls (or the file system where it resides). See *Exporting the Release Area* on page 24 for platform-specific information.

Step Three: Load the Software Distribution from CD

ClearCase LT product software is distributed on a ISO-9660 formatted CD (High Sierra, **hsfs**, **cdfs**). To copy the software from the CD to the machine you have selected as the networkwide release host:

1. Log on as **root** to a host with a CD drive. Ideally, this is the networkwide release host itself. But if that host does not have a CD drive, log on to another host that is NFS-accessible to the networkwide release host and mount the CD drive using NFS.
2. Place the ClearCase LT product distribution CD in the drive. On Solaris hosts, the volume manager mounts the CD automatically, so you can skip to Step 4.
3. Mount the CD. See *Architecture Mnemonics and mount Commands* on page 24 for command syntax for your platform.
4. If the CD drive is not on the networkwide release host, use NFS facilities to export that CD drive's mount point from its host, and mount it on the networkwide release host. For example:

   On the host with the CD drive:

   # **/usr/etc/exportfs –i –o ro /cdrom**

   On the release host:

   # **mount** *drive-host*:**/cdrom /cdrom**
5. Log on as **root** to the networkwide release host. From the Bourne shell, run the script to load the ClearCase LT software from the CD to the networkwide release host:

```
# cd /cdrom (most architectures)
  or
# cd /cdrom/rational (on Solaris)
# sh copy_rel.sh
```

Step Four: Run the site_prep Script

Note: Most examples in this chapter refer to specific architectures by their abbreviations, such as **sun5**, or to specific releases of ClearCase LT, such as 6.0 (for 2003.06.00). You may need to substitute other abbreviations or release numbers when you use these commands.

After the distribution has been loaded, run the **site_prep** script. You must run **site_prep** to prepare the release area for installation of ClearCase LT software on individual hosts. This script must be run as **root** and does the following:

- Sets correct permissions on all files in the release area
- Lets you specify the license server host and ClearCase LT server host that appear as the default choices when installations of ClearCase LT are run from this release area
- Lets you specify default information relevant to Rational Web Platform (RWP).

You must run **site_prep** for each architecture that your site supports. To guarantee access, log on to the release host as **root**. On this host, go to the install subdirectory for the first supported architecture.

For example:

```
# cd /usr/clearcaseLT_rls
# cd sun5/install
# ./site_prep
```

Using site_prep Defaults

If you specify **site_prep** without options, it does the following:

- Makes all files in the merged release area read-only and owned by **root**.
- Makes the **db_loader** and **db_dumper** programs (used by the **reformatvob** command) set uid **root**.
- Checks for any port number conflict between the **albd_server** and other services registered in the NIS services database.
- Prompts you for this information:
  - The host name of the license server host. If your site already has a Rational license server configured to serve Rational product licenses, you can provide the

name of that host here. If you need to set up a new license server host, supply the name of the computer you plan to use as this host. It must meet or exceed the requirements described in *Selecting a Computer to Be the License Server Host* on page 15.

- The host name of the computer that you plan to configure as the ClearCase LT server host. A ClearCase LT server must meet or exceed the requirements described in the *Release Notes*.
- The user name and group name under which Rational Web Platform will run and the port number on which RWP will listen for HTTP requests.

The values that you specify become the suggested defaults when **install_release** is run to install individual hosts.

Remember to run **site_prep** for any additional architectures that your site supports.

Note: A single release area can support many ClearCase LT communities (groups of ClearCase LT clients that use the same ClearCase LT server), but the default server name that you provide to **site_prep** will be correct only for a single community. Many ClearCase LT communities can share a license server, but each community can have only one ClearCase LT server. If you plan to install more than one ClearCase LT community from a release area, users must know whether to accept the site defaults and what to use for the ClearCase LT server name (and, if necessary, license server host name) if the defaults cannot be accepted.

site_prep Options

Usage: **site_prep** [**–enable_non_root | –disable_non_root**]
[**–license_host** *hostname* **| –lh** *hostname*]
[**–rwp_port** *rational-web-platform-port-no* |**–wp** *rational-web-platform-port-no*]
[**–rwp_account** *account-name* | **–wa** *account-name*]
[**–rwp_group** *group-name* |**–wg** *group-name*]
[**–server_host** *hostname* **| –sh** *hostname*]
[**–no_query | –nq**] [**–help**] [**–chmod | –setuid**]

Option	Description
–license_host *hostname*	Specifies a Rational license server that will serve licenses for all ClearCase LT hosts.
–server_host *hostname*	The name of the computer that will become the ClearCase LT server.
–enable_non_root	Allows non-**root** users to install this release.

–disable_non_root	Reverts to allowing only **root** users to install this release.
–no_query	If values are not specified using the command line: sets license host, registry host, registry region and backup registry host to `Unknown`; leaves the **setuid mount** options for install hosts unchanged; enables remote administration; suppresses querying for other values not set in the command line.
–help	Displays this summary of **site_prep** options.
–chmod	Disables write access to release area files and directories.
–rwp_port *rational-web-platform-port-no*	Port number used by RWP for HTTP requests. The default port number may vary by platform
–rwp_account *account-name*	Account name for RWP server. The default may vary by platform.
–rwp_group *group-name*	Group name for RWP server. The default may vary by platform.
–setuid	Mark certain files as setUID-**root.**

Allowing Non-root Users to Install ClearCase LT

Optionally, you can allow non-**root** users to install ClearCase LT. To do this, use the **–enable_non_root** option:

```
# site_prep –enable_non_root
```

If you have enabled non-**root** installation, enter the following command after all ClearCase LT hosts have been installed to eliminate the possibility of a security breach.

```
# site_prep –disable_non_root
```

Rational has taken care to minimize the security risks of non-**root** installation, but taking this step provides extra assurance.

Specifying Server Hosts

If you do not specify the names of your ClearCase LT server host and Rational Common license server host on the **site_prep** command line, you are prompted to enter them. The **–no_query** option suppresses the query, but sets the values as specified in the command line. If either host name is not specified, **–no_query** sets that value to `Unknown`.

When users install ClearCase LT clients, the host names defined by **site_prep** are offered as defaults. Accepting the defaults ensures that all hosts use the same networkwide resources.

Setting Protections on Files in the Release Area

If you have not loaded the distribution as **root**, the **–chmod** and **–setuid** options allow you to correct the release area's file and directory protections. (See *Step One: Identify a Location for the New Release Area* on page 25.) ClearCase LT requires that the files in the release area be write-protected and owned by **root**. These options are separated because you may need to use **–setuid**, which affects only a few files; **–chmod** affects all files and therefore takes longer. If you did not load the distribution as **root**:

- The directories may have been created with write access enabled. The **–chmod** option corrects the write-protection problem.
- The programs **db_loader** and **db_dumper** are not setuid-**root** as required. The **–setuid** option corrects this.

Setting Parameters for Rational Web Platform (RWP)

You can use the following options to configure Rational Web Plaform (RWP):

- **–rwp_port** (short name **–wp**) Takes as its argument the port number that will be used by RWP. The default value is **80**.
- **–rwp_account** (short nam**e –wa**) Specifies the *account-name*
- **–rwp_group** (short name **–wg**) Specifies the *group-name*

Caution: Installing RWP on a host that is already running another Web server may result in a port conflict that can cause RWP or the other Web server to fail on startup. We recommend that you install RWP on a host that does not have to run any other Web servers. If this is impossible, we recommend that you configure the other Web server to use ports that are not being used by RWP. If you cannot do this, you must configure RWP to use ports not used by the other Web server. For more information, see the *Administrator's Guide*.

The information that follows updates the *Administrator's Guide* with platform-specific information for AIX.

Configuring RWP on AIX

To configure RWP on AIX, use the default HTTP and HTTPS ports (80 and 443, respectively) if they are available. However, if another Web server is running on the intended RWP host and is using these ports, RWP must be configured to use other

ports. If you are using a nondefault port for HTTP, such as 81 for example, then this must be specified in the URL:

```
http://server:81/ccweb
```

Similarly, if you are using a nondefault port for HTTPS, such as 444 for example, then this must be specified in the URL:

```
https://server:444/ccweb
```

AIX hosts often ship with an `httpdlite` to support serving documentation; it uses port 80. Therefore, AIX hosts are configured by default such that the HTTP port is **81** and the HTTPS port is **443**. To change the HTTP port, edit the `Listen` directive in the file /opt/rational/common/rwp/conf/rwp.conf. To change the HTTPS port, edit the file /opt/rational/common/rwp/conf/ssl.conf and change all instances of **443** to another port.

The `rwp` and the Tomcat `java` processes run as user **guest** and group **usr**. To change the user ID, edit the `User` directive in /opt/rational/common/rwp/conf/rwp.conf and edit the command **su** *user-id* ... in /opt/rational/common/rwp/bin/rwp_startup, specifying a different user ID. To change the group, edit the `Group` directive in /opt/rational/common/rwp/conf/rwp.conf.

Step Five: Verifying site_prep Selections

The **site_prep** script creates or edits a text file named site.dat in each architecture-specific directory of the release area for which **site_prep** is run. For the example release area and scenario mentioned in *Step Four: Run the site_prep Script* on page 27, the directory is /usr/clearcaseLT_rls/v6.0/sun5.

For each architecture that your site supports, examine site.dat to verify that there were no typographical errors in the information provided to **site_prep**. If the information is incorrect, rerun **site_prep** for that architecture.

Step Six: Publicize the Location of the Release Area

After the release area is set up, notify any users who will be installing their own ClearCase LT hosts of the location of release areas for each type of host your site supports (for example, /net/filsvr1/usr/clearcaseLT_rls).

Installing the ClearCase LT Server and Clients

4

After you have set up the networkwide release host, prepared the release area, and configured a license server with ClearCase LT license keys, you can install Rational ClearCase LT on the server and its client hosts.

Note: ClearCase LT documentation uses *ccase-home-dir* as shorthand notation for the ClearCase Product Family installation directory. Substitute your own local installation directory for *ccase-home-dir*, whenever you encounter it. (The default installation directory is /opt/rational/clearcase.)

Types of ClearCase LT Hosts

A ClearCase LT community consists of a ClearCase LT server host and one or more ClearCase LT client hosts. Before you install ClearCase LT, you may want to review the requirements for these hosts.

The Server Host

The ClearCase LT server provides storage and access control for all VOBs and views used by a ClearCase LT community.

Every VOB is managed by several server programs, each of which places a load on the CPU, main memory, mass storage subsystems, and operating system resources of the ClearCase LT server. Routine VOB transactions are designed to make efficient use of the server's resources; however, some transactions can involve database processing that is both compute intensive and memory intensive. To adequately service these demands, a ClearCase LT server must meet or exceed the requirements described in *Basic Hardware Requirements* on page 3.

Views also consume server resources, primarily disk space. Each view consists of a *view directory*, which holds files and directories being modified by developers, and a *view storage directory*, which holds data about these elements. Developers normally keep their view directories on their client hosts. The view storage directory must reside on the ClearCase LT server, but it requires only a fraction of the disk space used by the view directory itself.

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Maintenance Requirements

VOBs and views make up your organization's data repository. Regular backup of VOBs is critical. VOBs have special backup requirements, which are described in the *Administrator's Guide*. Views store the developers' current work—in particular, checked-out versions of file elements. Views should also be backed up, although this task is somewhat less critical than VOB backup, especially if users check in their files regularly. View storage directories reside on the ClearCase LT server. View directories can reside anywhere, though they are most often created on client hosts. For more information about view backups, see the *Administrator's Guide*.

Client Hosts

Your network may include a large number of potential ClearCase LT client hosts. The **install_release** program has options for installing a group of client hosts at the same time. You can also allow users to run **install_release** themselves; they may not need to have **root** privileges to run the program (see *Step Four: Run the site_prep Script* on page 27).

Selection Criteria

ClearCase LT client programs make reasonable demands on a host's processing power and main memory. In the typical ClearCase LT community, developers use their own workstations, which must meet or exceed the performance characteristics described in *Basic Hardware Requirements* on page 3 to perform routine software development tasks.

Several users can share a client host (for example, using X terminals) if the host can provide appropriate multiples of these single-user performance specifications—both processing power and main memory.

Maintenance Requirements

A client host requires no maintenance specific to ClearCase LT.

Preparing a Host for ClearCase LT Installation

To prepare a host for installing ClearCase LT:

1. Verify that any required layered software packages or operating system patches have been installed. Before installing ClearCase LT on a host, see *Platform-Specific Information Relating to Installation* on page 5, which lists all patches and layered software packages that may be needed to support ClearCase LT.

2 You cannot install ClearCase LT on a computer that has any version of ClearCase installed on it. Therefore, you must deinstall ClearCase, using the **install_release** program from the appropriate ClearCase networkwide release area, before you install ClearCase LT.

The following sections describe how to use the various options of the **install_release** program to install ClearCase LT.

Installation Methods and Models

When you run **install_release**, you are prompted to select an installation method.

- Select **Local Install** to install the ClearCase LT server or client on the local computer (the one you are currently logged on to). **Local Install** is the only supported method for installing the ClearCase LT server.
- Select **Remote Install** to install ClearCase LT client software on a single remote computer.
- Select **Multiple Remote Installs** to install ClearCase LT client software—using identical install options—on more than one remote computer of the same architecture.
- Select **Local Deinstall** to remove software from the local computer.

The remote methods operate exactly like the local method for all but the final steps. In the final steps, **install_release** runs a command that carries out one or more remote installations of ClearCase LT client software on the computers you choose, using the model you specify. We recommend that you start with **Local Install** to become familiar with the installation options before trying the remote methods.

If you choose **Multiple Remote Installs**, you must provide a file that contains the host names of computers on which you want to install ClearCase LT client software. This file must have one host name per line. You are prompted for the name of this file by **install_release**. Multiple installations are installed with identical options. (Remote installation of the ClearCase LT server is not supported.)

After you select the installation method, **install_release** prompts you to select an installation model. There are four installation models, as well as a deinstallation model (described on page 39):

- **Standard** —Regular installation, with selected symbolic links to the release area
- **Full-Copy** — Regular installation, with no links to the release area
- **Mounted** — Host install by mounting a prepopulated installation directory
- **Link-Only** — Host install using a symbolic link to a platform-specific release area

The model you select is used for all installations performed by the current run of **install_release**. Review the models and their characteristics before you run **install_release** for the first time.

The model you choose determines both the file type (directory, symbolic link, or NFS mount point) of *ccase-home-dir* and, if it is a directory, its contents (files, or a combination of files and links to the release area). In choosing the model, you need to consider the amount of available storage and the expected patterns of use for the target machine:

- Is the machine a server or a client?
- Does it need to operate even when the networkwide release area is unavailable?
- If it is a server, does it have adequate local disk space for VOBs and views as well as the ClearCase LT server software?
- Is *ccase-home-dir* on a read-only partition?

You may also want to consider the administrative advantages of each installation model:

- The **Standard** installation model balances a need to conserve disk space with a requirement that essential features should always be accessible on the local system. Essential files are installed directly on the target. Nonessential files are installed on the target as symbolic links to the release area.
- The **Full-Copy** installation model copies all the ClearCase LT software from the release area to the local workstation. Hosts installed using this model do not need to use the network to access ClearCase LT programs and Help files, but they require more disk space for ClearCase LT than do hosts installed using other models.
- **Mounted** installs simplify the task of maintaining ClearCase LT software on a large number of clients. But any host installed using this model cannot run any ClearCase operations if the mounted *ccase-home-dir* becomes inaccessible because of system or network failure.
- **Link-Only** installs simplify installation and maintenance in a way that is similar to mounted installs, though with similar drawbacks and a few additional constraints.

Each of these models is described in detail in the following sections.

Features Common to All Installation Models

No matter which installation model you choose, some ClearCase LT files must be installed on the local system outside *ccase-home-dir*. These include system components necessary on the ClearCase LT server, system startup/shutdown scripts, X Window

System default files, and so forth. The amount of space on the local system required by these files varies from system to system, but rarely exceeds 1 MB.

The Standard Installation Model

The **Standard** installation model creates *ccase-home-dir* on the target system as a directory and populates it with a combination of locally installed files and links to the file in the release area. All shared libraries and critical executables are copied onto the target system. Files such as Help and nonessential scripts and utilities are installed as links to the release area. Systems installed using the **Standard** model perform all essential ClearCase functions as long as the ClearCase LT server is accessible, even when the release area is inaccessible. There is no performance penalty associated with the **Standard** installation model, and it consumes significantly less disk space than the **Full-Copy** model.

We recommend the **Standard** installation model for the ClearCase LT server as well as for any client that has adequate disk space and does not need to perform nonessential ClearCase LT operations when the release area is unavailable.

The Full-Copy Installation Model

The **Full-Copy** installation model creates *ccase-home-dir* on the target system as a directory and populates it with all the files and directories from the release area. No symbolic links to files in the release area are needed. Systems installed with this model perform all ClearCase functions as long as the ClearCase LT server is accessible.

We recommend the **Full-Copy** model if you are installing a host that must run essential and nonessential ClearCase LT operations even when the release area is unavailable.

You are required to use the **Full-Copy** model when you are installing a host that provides a shared *ccase-home-dir* for **Mounted** client installations.

For any other situation, the **Full-Copy** model probably represents an unnecessarily conservative approach to installation.

The Mounted Installation Model

A host installed using the **Mounted** installation model mounts *ccase-home-dir* by using NFS and requires only a small amount of local disk space for other ClearCase LT files that are not installed in *ccase-home-dir*. This model is useful at sites where systems share the disk partition on which the *ccase-home-dir* resides or where an administrator wants to maintain a single *ccase-home-dir* to be shared by many systems. In either case, *ccase-home-dir* is a remote disk partition, which is typically mounted read-only.

The **Mounted** installation model requires access to a **Full Copy** *ccase-home-dir* from the system being installed at the time **install_release** is run. When you execute **install_release**, the **Mounted** model verifies that the existing *ccase-home-dir* directory contains software equivalent to that in the release area.

The **install_release** program then performs the installation steps that are common to all installation models. (See *Features Common to All Installation Models* on page 23.) It does not mount any file system to populate *ccase-home-dir* during a **Mounted** installation.

To correctly populate *ccase-home-dir* for use by a **Mounted** model installation, a system that exports a writable disk partition is installed with a **Full-Copy** installation. After this step is performed, the systems that mount this disk partition have a fully populated *ccase-home-dir*.

The **Mounted** installation model requires a stable network. ClearCase LT servers installed using the **Mounted** model may suffer performance degradation on heavily loaded networks. Both the **Mounted** and **Link-Only** models share these characteristics.

With the file system containing the installation now available, you can perform a **Mounted** install on any system on the network that has access to that file system. To perform the **Mounted** install, select a system that is not installed with ClearCase or ClearCase LT, and perform the following procedure:

Note: In the following steps, the system with the **Full-Copy** installation is referred to as Machine A and the system on which the **Mounted** install is performed is referred to as Machine B. The install directory is **/opt/rational**.

1 On Machine B, manually create the install directory **/opt/rational**

2 On Machine B, mount the directory **/opt/rational** that resides on Machine A as **/opt/rational** on Machine B. For example:

```
# mount Machine A:/opt/rational  /opt/rational
```

On Machine B you should now see all the files under **/opt/rational**.

3 On Machine B, run **install_release** (and select the **Mount** installation model) to complete the installation.

The **Mounted** install model requires a stable network. ClearCase LT servers installed using this model may suffer performance degradation on heavily loaded networks. Both the **Mounted** and **Link-Only** models share these characteristics.

Restrictions

Note that your VOB database format must conform to schema 53. Extended VOB support (schema version 54) is not supported for use with the **Mounted** installation model.

The **Mounted** installation model does not support the ClearCase Web Server component.

The Link-Only Installation Model

The **Link-Only** installation model creates *ccase-home-dir* on the target host as a symbolic link to a platform-specific release area. Clients installed with the **Link-Only** model link directly to the release area for all ClearCase LT files.

The Deinstallation Model

The **Local Deinstall** model provides a list of currently installed products and components to remove from the local system. After all selections have been made, you are prompted to finish the deinstall.

Local Deinstall preserves important system files in /var/tmp/Rational.preserve.

Additional Steps for the Mounted Installation Model

The following steps must be performed before deinstalling an installation of ClearCase installed with the **Mounted** model:

1. On the **Mounted** installed machine (that is, Machine B in the procedure in *The Mounted Installation Model* on page 37), stop ClearCase:

   ```
   # ccase-home-dir/etc/clearcase stop
   ```

2. Unmount *ccase-home-di*r. For example:

   ```
   # umount /opt/rational
   ```

You can then run **install_release**, selecting the **Local Deinstall** model.

Compatibility Between Models

If you want to change to another installation model, deinstall your currently installed products first. The installation script will warn you if you attempt to change models. For example, installing with a **Standard** installation model over a a version of ClearCase installed with the **Full-Copy** model, when installing new software.

VOB Database Support

Note: Schema version 54 is not supported for **mounted** installs.

The current release of ClearCase LT supports two VOB database formats: schema version 53 and schema version 54 (extended VOB support). Schema version 54 allows files in the VOB database to grow beyond 2 GB.

As part of installing this release on a server, you must select which VOB format you want to use:

- If you are an existing ClearCase LT customer, you probably want to select the format that you are currently using. You can run **cleartool -ver** from the command line to see the current VOB database schema version.
- If you are an existing customer using schema version 53 and you select schema version 54, you must reformat your existing VOBs immediately after installing to allow users to access VOB data.
- If you are a new ClearCase LT customer, select the latest VOB format (schema version 54).

If you have an existing installation that uses schema version 53 and you select schema version 54 for this installation but change your mind before having reformatted your VOBs, you can reinstall ClearCase and select schema version 53. However, if you have already reformatted your VOBs, Rational does not support reformatting back to the earlier VOB format.

See the **reformatvob** reference page for more information about VOB database formats, the implications of each selection, and what you need to know to reformat your VOBs.

Preinstall Checklist

Before you begin performing installations:

- Verify that the ClearCase LT product release area is visible from every host to be installed. This is typically done through NFS mounts, symbolic links, or both. Note that this is a requirement regardless of the installation model you choose.
- Verify that each host has adequate disk space for the intended model of installation. The ClearCase LT server must also have enough disk space for view and VOB storage. See *Disk Space Requirements for Individual Hosts* on page 5.
- If you are performing any remote installations, verify that the **root** identity on the install host (the host on which you will run **install_release**) has remote shell access to all the remote targets. Verify this by logging on as **root** on the install host and running the following command, substituting each remote target name for *remote-hostname*:

```
# rsh remote-hostname date
```

If **root** has remote shell access to the target, you see the output of the **date** command. If you receive a `permission denied` error, see your operating system vendor's **man** pages for **rsh**.

After the release area is prepared with **site_prep**, default values for the ClearCase LT server and the license server host are established and are offered as defaults by **install_release**.

If you are not going to use these defaults, you need to know the following information before you run **install_release**:

- The name of your ClearCase LT server host
- The name of your Rational license server host

Running install_release

Install the ClearCase LT server before you install the clients. ClearCase LT server installation includes server configuration and license check procedures that set up and validate the ClearCase LT environment. You cannot verify that a client is operating correctly until the ClearCase LT server has been installed and configured.

To run **install_release**:

1. Log on to the host to be installed. If non-**root** installation has been enabled at your site (see *Step Four: Run the site_prep Script* on page 27), you can log on as a nonprivileged user. Otherwise, you must log on as **root**.

   Note: If the **site_prep** script was not run on the release area, **install_release** aborts.

2. Go to the **install** subdirectory within the networkwide release area for the appropriate architecture:

   ```
   # cd /net/bigserver/usr/clearcaseLT_rls (typical release area)
   # cd sun5/install                       (architecture-specific location within release area)
   ```

   You can find the list of supported architectures in the section *Supported Platforms* on page 1. For a list of architecture mnemonics, see *Architecture Mnemonics and mount Commands* on page 24.

3. Run the **install_release** program:

   ```
   # ./install_release
   ```

   After a series of legal notices, you see the list of products that can be installed from this release area. In addition, you are informed of both the temporary and permanent locations of the log file of your installation. The log file records

everything that you see during the installation and the results of your actions. records all status and error messages displayed on the screen, your input, and the results of your actions.

If the installation completes without generating informational messages, the transcript in /tmp is deleted. If the installation fails, the transcript is preserved. If the installation completes but generates error or informational messages, the transcript is saved in /var/adm/rational/clearcase/log/Rational_install.*time-stamp*.

Note: You can type **q** at any installation prompt to quit the installation.

4 Choose your installation method from the following menu:

```
1. Local Install:            Install occurs on the local host.
2. Remote Install:           Install occurs on a single remote host.
3. Multiple Remote Installs: Install occurs on a set of remote hosts.
4. Local Deinstall:          Deinstall occurs on the local host.

Type "Help" or "h" for expanded descriptions

Type "Quit" or "q" to exit the installation

Please select the installation method by number.

Method of installation>>
```

After you select an installation method, you see the Rational license agreement. You can view the agreement by pressing the space bar to display the next page. Press **x** or **q** to skip displaying the remainder of the license agreement.

When prompted, you must accept the terms of the license agreement to continue the installation.

The Third_Party license agreement is then displayed. You can view the agreement by pressing the space bar to display the next page. Press **x** or **q** to skip displaying the remainder of the license agreement.

When prompted, you must accept the terms of the license agreement to continue the installation.

5 Choose your installation model. All products installed in this session are installed using the same model.

```
1. Standard:Regular installation, allowing links to this release area.
2. Full-copy: Regular installation, with no links to this release area.
3. Mounted:Host install via mounted or pre-populated
       /opt/rational/clearcase or CLEARCASEHOME.
4. Link-only:Host install via a symbolic link to this release-area.
5. Deinstall:Deinstall software from the local installed host.


Type "Help" or "h" for expanded descriptions

Type "Quit" or "q" to exit

Please select the installation type by number.
```

6 Specify the directory on the local machine in which to install ClearCase LT. Unless you have been instructed otherwise, we recommend that you accept the supplied defaults, shown in [square brackets], on all such prompts. Accept the default by pressing RETURN.

7 Name the location of the networkwide release area. You would typically accept the default. This is the location from which the ClearCase LT files are installed. This is where any files or directories installed as symbolic links actually reside.

8 Now you are presented with the list of components and products that can be selected for installation.

```
1 : ClearQuest Integration with ClearCase LT
2 : ClearCase LT Client Installation
3 : ClearCase LT Server Installation (includes client)
4 : ClearCase LT Web Interface Server
f : Finish selection
x : Toggle expanded descriptions
r : Reset selections
q : Quit
Selection number(s)>>
```

The list you see may differ from the list shown here. Select a product by typing its number and pressing RETURN. **install_release** responds by redisplaying the list with an asterisk to the left of the selected product. If you need more information about a product, enter **x** to expand (or, if already expanded, contract) the component descriptions. Enter **r** to reset the list to its original state (nothing selected). When you have finished selecting products, enter **f**.

9 After you enter **f**, the **install_release** program displays a list of the components that you have selected for installation. Each product may include other components. Components cannot be selected individually. The choice of products and list of components are recorded in the install transcript.

Most of the remaining prompts display a suggested default response. Unless you are instructed otherwise, accept each default by pressing RETURN at the prompt. The defaults will be different on your system. (See *Running the site_prep Script* on page 4 to see where these default names come from.)

10 Regardless of the product selected, **install_release** prompts you to enter the name of the license server host.

```
ClearCase LT License Server Host [<default_license_server_name>]:
```

11 If ClearCase LT Client is selected, **install_release** prompts for the name of the ClearCase LT server host.

```
ClearCase LT Server Host [<default_cclt_server_name>]:
```

12 If ClearCase LT Server is selected, **install_release** prompts for server setup information. Server setup is a required part of the initial installation of a ClearCase LT server. To complete the server setup process, **install_release** needs these items of information:

- **VOB owner name:** Server setup creates these VOBs: one to hold UCM objects for the initial project, and one to hold source code (files and directories) for the initial project.

  You will see this prompt:

```
Specify the name of an existing user who will become the owner of
the VOBs created during server setup. This user and all other users
who access ClearCase LT on this server should have the same primary
group:
```

  There is no default response to this prompt. Provide the name of an existing user account. We strongly recommend that this user's primary group (the group listed in the user's entry in the **passwd** database) be one to which all ClearCase LT users in this community belong. If you cannot assign all of your ClearCase LT users to the same primary group, you must edit the supplemental group list of each VOB after server setup is complete. For more information about VOB supplemental group lists and ClearCase access controls, see the *Administrator's Guide* for Rational ClearCase and ClearCase LT.

- **Server storage location root**: Server setup creates directories on the ClearCase LT server that provide VOB and view storage for all users. These directories must be located on a disk partition that has adequate space for VOB and view storage and can be backed up regularly.

```
Server storage locations provide storage for the VOBs and Views
created by all users. This directory must be located on this
ClearCase LT Server, and should be regularly backed up:
[/usr/ClearCaseStorage]
```

  VOB and view server storage locations are created as subdirectories of /usr/ClearCaseStorage or another pathname you specify. If you do not have rights to create files and directories at this pathname, server setup will fail.

- **Initial project name.** Specify the name of the initial project if **Initial_Project** is not satisfactory.

- **Source VOB name**. Specify the name of a VOB to hold the initial project's source code if **sources** is not satisfactory.

- **Extended VOB support**. Specify whether to install extended VOB support.

After all the questions are answered, **install_release** has the information needed to perform the installations you have requested, as stated in the on-screen information.

```
The interactive portion of the installation is complete.
If you choose to continue, the previously listed components
will be installed/updated.


Upon completion, the installation status will indicate whether
there were problems, and provide reminders of post-installation
steps.


This WILL include stopping all currently running ClearCase LT
software.



**** Enter 'quit' or 'no' to abort the installation ****
**** Enter 'yes' or press <RETURN> to continue ****

Continue installation?(yes, no, quit)[yes]:
```

At this point, you must decide whether to go ahead with the installation. Until now, there has been no modification of the system (other than creating the transcript). No files have been moved, and no processes have been affected.

After the installation is finished, read all messages displayed. In particular, look for errors that may have occurred. If there is a problem, look in the installation transcript log for information on how to correct the errors. If you are unsure how to proceed, call Rational Customer Support.

Note: If the installation was aborted, the installation log may be in /tmp.

A common installation error is lack of permission to create or modify standard system configuration files. Typically, you must become **root** on a remote host to modify a configuration file or administrative file. If you are not accustomed to making such modifications, seek advice from your system administrator before you proceed.

Setting the Browser

On Solaris and HP systems, set the browser to Netscape 7. For information on the Netscape browser environment variables, see the **xcleardiff** reference page. On AIX systems, set the environment variable CCASE_MOZILLA to the pathname of the Mozilla 1.4 browser. For information on the Mozilla environment variables, see the *Release Notes*.

Raising the Feature Level

If you are upgrading your VOB server host from a previous ClearCase LT release, and the feature level of the releases differ, you must raise the feature level. See the *Release Notes* to determine the feature level of both the new release and the release from which you upgraded.

- If the feature levels are the same, there are no additional steps to take.
- If the feature levels differ, refer to the **chflevel** reference page for instructions on raising the feature level.

Recommended Postinstallation Administrative Procedures

Administrative procedures and maintenance programs for the ClearCase LT server are described in the *Administrator's Guide* for Rational ClearCase and ClearCase LT. Recommended procedures include backing up view and VOB storage. Maintenance programs must be run on VOBs regularly, to control their growth. No periodic maintenance procedures are required for views.

Verifying Installation on Individual Hosts

Use the **cleartool hostinfo -long** command to verify that ClearCase LT is configured properly. If the command succeeds, the host is able to acquire a ClearCase LT license. The output of **hostinfo** shows the installed version of ClearCase LT, the server name, as well as other information.

```
clearool hostinfo –long
       Client: anabel
       Product: Rational ClearCase LT 2003.06.00
       Operating system: SunOS 5.8 Generic_108528-09
       Hardware type: sun4u
       Registry host: elsie
       Registry region: CCLT
       License host: elmer
```

The name of the ClearCase LT server for this client is listed as the `Registry host`.

Customizing a Client Host's Environment for ClearCase LT

If this is a first-time installation on your computer, you may want to customize your environment to make it easier to use ClearCase LT.

Modifying Your Search Paths

Access to ClearCase programs and online documentation (reference pages) depends on certain environment variable settings. The most reliable way to establish these settings is to edit your shell startup script.

Shell program	Startup script in home directory
C shell	**.cshrc**
Bourne shell	**.profile**
Korn shell	**.profile**

Note: We recommend that C shell users avoid placing ClearCase settings in file **.login**, which is run only by login shells.

Search Path for Executables

Add the ClearCase bin directory to your executables search path, as shown in Table 13. The variable CLEARCASE_HOME must be set if ClearCase is installed at a location other than /opt/rational/clearcase.

Table 13 Setting the Search Path for Executables

Shell	At standard ClearCase installation directory: /opt/rational/clearcase	Other location: /opt/ccase
.cshrc C shell	`set path= ($path /opt/rational/clearcase/bin)`	`setenv CLEARCASE_HOME /opt/ccase set path=($path $CLEARCASE_HOME/bin)`
.profile Bourne/Korn shell	`PATH=${PATH}: /opt/rational/clearcase/bin export PATH`	`CLEARCASE_HOME=/opt/ccase PATH=${PATH}:$CLEARCASE_HOME/ bin export CLEARCASE_HOME PATH`

Search Path for Reference Pages

Read this section only if you plan to access online reference pages with the standard **man** or **xman** commands. You can skip this section if you intend to rely on the Help or if you will always use the **cleartool man** command to access reference pages.

Users of UNIX operating systems are accustomed to using the **man(1)** command to get online documentation. ClearCase includes a comprehensive set of reference pages, accessible in several ways:

- Through the standard **man** command (UNIX command-line interface)
- Through the standard **xman** command (X Window System graphical interface)
- Through the **man** subcommand built in to the **cleartool** program

The standard **man** and **xman** commands can locate reference page files in a variety of locations. These programs can use—but do not require—a search path specified by the environment variable MANPATH. If you want to read ClearCase reference pages by using these programs, add the ClearCase **man** directory to your reference pages search path, as shown in Table 14.

Table 14 Setting the Search Path for Reference Pages

Shell	At standard ClearCase installation location: /opt/rational/clearcase	Other location
.cshrc C shell	`setenv MANPATH \ ${MANPATH}: /opt/rational/clearcase/doc/man`	`setenv MANPATH \ ${MANPATH}:$CLEARCASE_HOME/doc/man`
.profile Bourne/Korn shell	`setenv MANPATH \ ${MANPATH}: /opt/rational/clearcase/doc/man`	`MANPATH=\ ${MANPATH}: $CLEARCASE_HOME/doc/man export MANPATH`

Note: If your shell startup file does not set the MANPATH environment variable, see the reference page for the **man** command itself to determine your system's default search path for **man** pages. Then, set MANPATH accordingly in your shell startup script, just after the commands that you have copied from Table 13. For example:

setenv MANPATH /usr/man:/usr/contrib/man:/usr/local/man

Other ClearCase Search Paths

ClearCase uses configuration files and environment variables to find various other resources that it may require during processing. In particular, some ClearCase utilities need a way to distinguish different file types (text and binary files, for example) or to find a text editor. The graphical tools also need access to file-typing data, icons and bitmaps, X Window System resource schemes, group files, and text editors.

Unlike the PATH and MANPATH variables, the configuration information for these additional resources is usually predefined, and you do not need to do anything. However, if you choose to customize these resources, or if ClearCase behavior leads you to suspect that some adjustment is required, use Table 15 to find more information.

Table 15 Information on ClearCase Search Paths

Object or resource	Where to find more information
File-typing data	**cc.magic** reference page
Icons, bitmaps	**cc.icon** reference page
X resource schemes	**schemes** reference page
Group files	**env_ccase** reference page (GRP_PATH environment variable)
Text editor	**env_ccase** reference page (VISUAL, EDITOR, WINEDITOR environment variables)

Note: X resource schemes control the appearance of the ClearCase graphical interface. See the **schemes** reference page for information.