

CLEARCASE AND MULTISITE RELEASE NOTES

Release 4.2

Windows Edition

Windows 98

Windows Me

Windows NT

Windows 2000

Rational[®]
the e-development company™

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Patent

U.S. Patent Nos. 5,574,898 and 5,649,200 and 5,675,802. Additional patents pending.

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This software and documentation is based in part on BSD Networking Software Release 2, licensed from the Regents of the University of California. We acknowledge the role of the Computer Systems Research Group and the Electrical Engineering and Computer Sciences Department of the University of California at Berkeley and the Other Contributors in its development.

This product includes software developed by Greg Stein <gstein@lyra.org> for use in the mod_dav module for Apache (http://www.webdav.org/mod_dav/).

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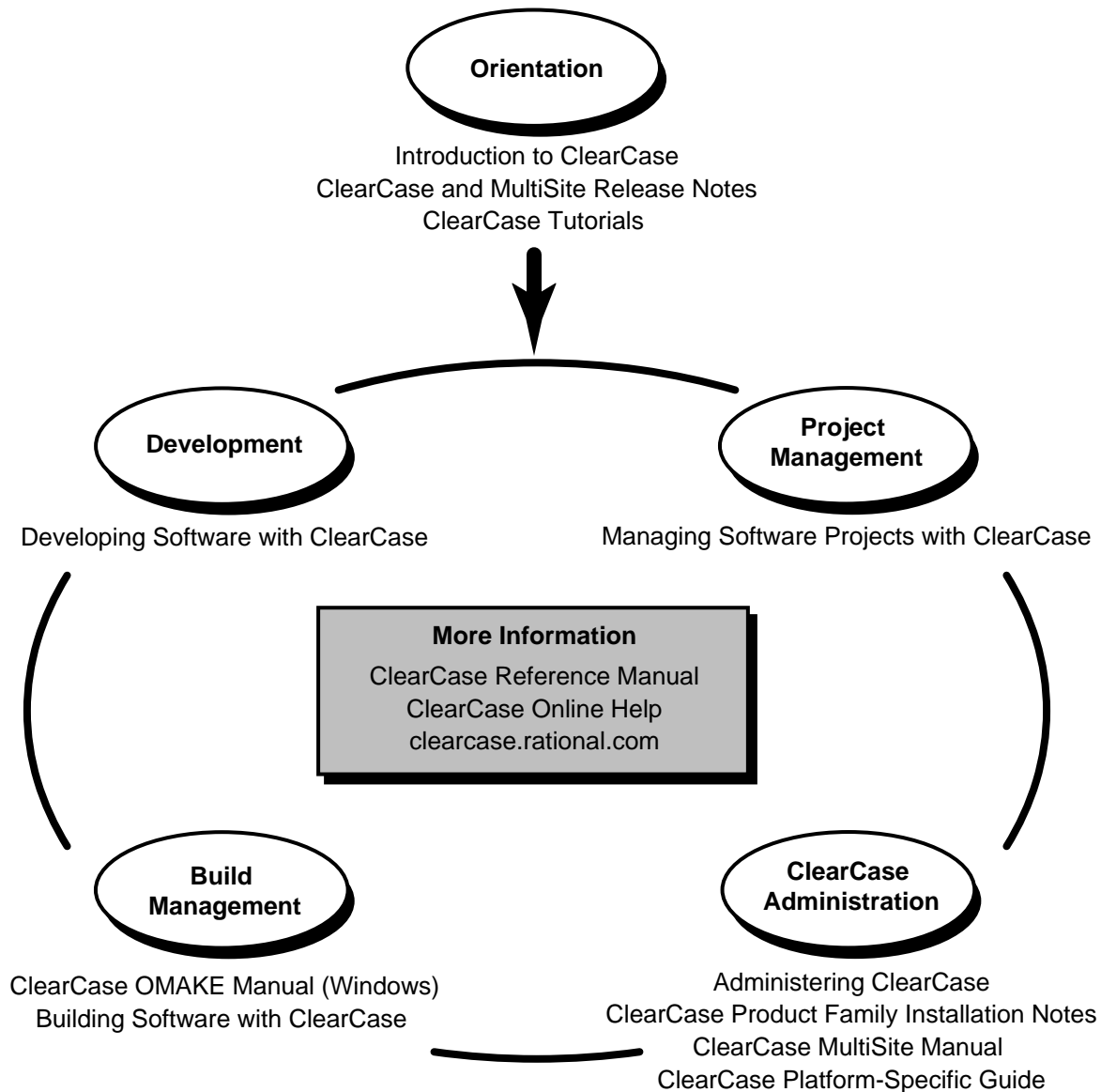
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Preface

About This Manual

This document describes Release 4.2 of both Rational ClearCase configuration management software and Rational ClearCase MultiSite software for the Windows 98, Windows Me, Windows NT, and Windows 2000 operating systems.

ClearCase 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 `/usr/atria` on UNIX and `C:\Program Files\Rational\ClearCase` on Windows.
- *attache-home-dir* represents the directory into which ClearCase Attache has been installed. By default, this directory is `C:\Program Files\Rational\Attache`, except on Windows 3.x, where it is `C:\RATIONAL\ATTACHE`.
- **Bold** is used for names the user can enter; for example, all command names, file names, and branch names.
- *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 are in small caps and 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, ClearCase recognizes “...” within a pathname as a wildcard, similar to “*” or “?”. See the **wildcards_ccase** reference page for more information.

- If a command or option name has a short form, a “medial dot” (·) character indicates the shortest legal abbreviation. For example:

lsc·heckout

This means that you can truncate the command name to **lsc** or any of its intermediate spellings (**lsch**, **lsche**, **lschec**, and so on).

Online Documentation

The ClearCase graphical interface includes a standard Windows help system.

There are three basic ways to access the online help system: the **Help** menu, the **Help** button, or the F1 key. **Help>Help Topics** provides access to the complete set of ClearCase online documentation. For help on a particular context, press F1. Use the **Help** button on various dialog boxes to get information specific to that dialog box.

ClearCase also provides access to full “reference pages” (detailed descriptions of ClearCase commands, utilities, and data structures) with the **cleartool man** subcommand. Without any argument, **cleartool man** displays the **cleartool** overview reference page. Specifying a command name as an argument gives information about using the specified command. For example:

- > **cleartool man** *(display the cleartool overview page)*
- > **cleartool man man** *(display the cleartool man reference page)*
- > **cleartool man checkout** *(display the cleartool checkout reference page)*

ClearCase’s **-help** command option or **help** command displays individual subcommand syntax. Without any argument, **cleartool help** displays the syntax for all **cleartool** commands. **help checkout** and **checkout -help** are equivalent.

> **cleartool uncheckout -help**

Usage: uncheckout | unco [-keep | -rm] [-cact | -cwork] pname ...

Additionally, the online *ClearCase Tutorial* provides important information on setting up a user’s environment, along with a step-by-step tour through ClearCase’s most important features. To start the *ClearCase Tutorial*, choose **Tutorial** in the ClearCase folder off the **Start** menu.

Technical Support

If you have any problems with the software or documentation, please contact Rational Technical Support via telephone, fax, or electronic mail as described below. For information regarding support hours, languages spoken, or other support information, click the **Technical Support** link on the Rational Web site at **www.rational.com**.

Your Location	Telephone	Facsimile	Electronic Mail
North America	800-433-5444 toll free or 408-863-4000 Cupertino, CA	408-863-4194 Cupertino, CA 781-676-2460 Lexington, MA	support@rational.com
Europe, Middle East, and Africa	+31-(0)20-4546-200 Netherlands	+31-(0)20-4546-201 Netherlands	support@europe.rational.com
Asia Pacific	61-2-9419-0111 Australia	61-2-9419-0123 Australia	support@apac.rational.com

READ ME FIRST

1

This chapter describes important information in this release. Read it *before* you attempt to install Rational ClearCase or Rational ClearCase MultiSite.

NOTE: The term CPF stands for ClearCase Product Family and refers to the products ClearCase, Attache, and MultiSite. ClearGuide is not included in Release 4.2. The term 3.x refers to 3.2.1 and the term 4.x refers to 4.0, 4.1, and 4.2.

1.1 Supported Architectures

ClearCase and MultiSite Release 4.2 run on the platforms listed in Table 1.

Table 1 Supported Platforms for ClearCase and MultiSite in Release 4.2

Hardware platform	Operating system
Intel x86	Windows NT 4.0 SP4, 4.0 SP5, and 4.0 SP6a Windows 2000 SP1 Windows 98 all versions (client only) ¹ Windows Me (client only) ¹

1. Rational ClearCase 4.2 clients support the latest Windows 2000, Windows NT, Windows Me, and Windows 98 releases.

This release of ClearCase does not include support for Windows 95. Customers who require support for Windows 95 must run an earlier version of ClearCase (4.1) or upgrade their Windows 95 clients to at least Windows 98 or Windows Me.

For more information about differences in features and functionality by platform, see the *ClearCase Platform-Specific Guide*.

1.2 Supported File Systems

Table 2 lists the file systems that ClearCase supports. If a file system does not appear on the list, it is not supported. Please inform Rational Technical Support or your sales representative of any concerns you have about this list.

Table 2 Supported File Systems by Platform

Platform	Supported file systems
Windows NT	FAT, NTFS, LANMAN, NFS ¹
Windows 98	FAT, FAT32
Windows Me	FAT, FAT32, LANMAN
Windows 2000	FAT, FAT32, NTFS, LANMAN

1. See Table 3 for more information on NFS platforms

Windows/UNIX Interoperation

This section provides information about ClearCase support for file access between Windows and UNIX platforms, as it pertains to Release 4.2. As of this release, ClearCase supports these Windows/UNIX interoperation solutions:

- ClearCase File Server
- Third-party NFS client products
- Third-party SMB server products

For more information about ClearCase support of these products, see *Administering ClearCase*. For the most recent information about ClearCase Windows and UNIX interoperation, see the Rational ClearCase Web site, clearcase.rational.com.

ClearCase File Server (CCFS)

ClearCase clients on Windows NT, Windows 2000, Windows Me, and Windows 98 that use snapshot views can access files in UNIX VOBs using the ClearCase File Server (CCFS). In addition, UNIX clients using snapshot views can access files in Windows VOBs using CCFS. If a host uses only snapshot views and is configured to use CCFS, ClearCase does not require third-party NFS or SMB products to access UNIX or Windows VOBs.

NOTE: CCFS does not support dynamic views.

On Windows NT and Windows 2000, CCFS is disabled by default for ClearCase clients and servers. On Windows 98 and Windows Me, CCFS is enabled by default for ClearCase clients.

For more information about CCFS, see *Administering ClearCase*.

Third-Party NFS Client Products

ClearCase hosts on Windows NT can access UNIX VOBs and views using an NFS client for Windows NT product. To use NFS, you must install one of the products listed in Table 3 on each ClearCase for Windows NT host from which you want to access a UNIX VOB or view.

Table 3 Supported NFS Client Products for Windows

Product	Supported product versions
Hummingbird NFS Maestro	7.0.0.1 (recommended for Release 4.x of ClearCase on Windows NT and Windows 2000)
Shaffer Solutions Corporation DiskAccess	5.0 or later
Microsoft Windows NT Services for UNIX (SFU) Add-On Pack (NFS Client)	Version SFU 1.0 only, at this time. For Windows NT 4.0 For Windows 2000 For Windows Me

Syntax TotalNET Advanced Server SMB Server Product

Windows NT hosts can use an SMB server product to access UNIX VOBs and views. To use SMB, you must install one of the products listed in Table 2 on each UNIX server host from which you want to access a UNIX VOB or view.

Table 4 Supported SMB Server Products for Windows NT

Product	Platform	Supported product versions
Syntax TotalNET Advanced Server (TAS)	Solaris 2.6 or later	5.2 (Patch 10), 5.3 (Patch 3), or 5.4.1 patch 3; 6.0 or later
	HP-UX 11.0 or later	5.4.1 patch 3; 6.0 or later
	AIX 4.3.2 and above	TAS 6.0
SAMBA (available from www.samba.org)	Solaris 8 or later	SAMBA 2.0.7

See the Rational Web site (clearcase.rational.com) for current Windows and UNIX interoperation partner information.

For more information about SAMBA or TAS, see *Administering ClearCase*.

1.3 Hardware and Software Requirements

This section describes other software and hardware requirements for running ClearCase and MultiSite.

Basic Software Requirements

ClearCase requires the following software on Windows NT, or Windows 2000:

- Windows Workstation or Windows Server
- TCP/IP (shipped with Windows NT 4.0, Windows Me, and Windows 2000)

- Internet Explorer 4.0.1 SP1 or later; note that this does not have to be the default browser, but is required for use of some ClearCase features, including the ClearCase Explorer, the HTML Diff Merge tool, the ClearCase Automation Library (CAL), and the ClearCase Administration Console.
- If acting as a ClearCase Web server: Web server software, either Apache (1.3.6 or later), Netscape Enterprise (3.5.1 or later), or Microsoft Internet Information Server (IIS 4.0 or 5.0).
- If acting as a server for the ClearCase integrations with FrontPage 98, FrontPage 2000, Visual InterDev, IIS Web server software and the FrontPage Server Extensions (FPSE).
- An Adobe Acrobat Reader, version 3 or later, to access the online manuals, which are PDF files.
- On any system accessing ClearCase through the Web interface, a Web browser; either Netscape 4 (version 4.6 or later) or Internet Explorer 4.0.1 (SP 1) or later. Netscape 6 is not supported. (Note that it is not necessary to install ClearCase on such a system.)

ClearCase requires the following software on Windows 98 and Windows Me:

- Client for Microsoft Networks (shipped with Windows 98 and Windows Me)
- TCP/IP (shipped with Windows 98 and Windows Me)
- Windows Sockets 2 (shipped with Windows 98 and Windows Me)
- Internet Explorer 4.0.1 SP1 or later; note that this does not have to be the default browser, but is required for use by some ClearCase features, including the ClearCase Explorer, the HTML Diff Merge tool, and the ClearCase Automation Library (CAL).
- An Adobe Acrobat Reader, release 3 or later, to access the online manuals, which are PDF files.
- On any system accessing ClearCase through the Web interface, a Web browser; either Netscape 4.6 or later (but before Netscape 6.0), or Internet Explorer 4.0.1 (SP 1) or later. (Note that it is not necessary to install ClearCase on such a system.)

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:

Windows NT	128 MB
Windows 2000	128 MB

Disk Space Requirements for Individual Hosts

Table 5 shows the approximate disk space requirements for a new installation of ClearCase. These figures are for ClearCase files and upgraded system files only. In addition to the requirements below, the installation needs 15 MB of temporary disk space.

Table 5 Disk Space Required for ClearCase Files and Upgraded System Files

ClearCase installation type	Disk space required
Windows 98 and Windows Me client	70 MB
Windows NT and Windows 2000 client or server using standard installation with dynamic views (5 MB for dynamic views), local VOBs, and local views	120 MB
Windows NT and Windows 2000 client or server with all optional components	135 MB

In addition, any host that will have snapshot view directories needs enough disk space to contain all files loaded into the snapshot 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.

Any host that will have VOB- or view-storage directories needs enough disk space to contain the files and databases used for storage. The amount of space required depends on the characteristics and use of the VOBs and views.

1.4 Platform-Specific Information Relating to Installation

This section provides information that varies from platform to platform. *ClearCase Product Family Installation Notes* specifically indicate when you will need this information and defines the terms used in this section.

Web Site of Operating System Vendors

You can find up-to-date information on Microsoft Windows operating system issues at the Microsoft Web site www.microsoft.com.

1.5 ClearCase and MultiSite Patches Incorporated in This Release

ClearCase Release 4.2 and MultiSite Release 4.2 include all the patches listed in Table 6. If you are using a more recent patch on any of the patch streams listed, contact Rational Technical Support to see whether there is a corresponding patch for Release 4.2.

Table 6 ClearCase and MultiSite Patches Incorporated into This Release

Patch stream	Last patch incorporated into this release
ClearCase v3.2.1	clearcase_p3.2.1.NT-33 and earlier
ClearCase v4.0	clearcase_p4.0.NT-21 and earlier
ClearCase v4.1	clearcase_p4.1NT-15 and earlier
MultiSite v3.2.1	multisite_p3.2.1.NT-8 and earlier
MultiSite v4.0	multisite_p4.0.NT-4 and earlier
MultiSite v4.1	multisite_p4.1.NT-3 and earlier

1.6 Upgrading from a Previous Release

If you have a version of ClearCase prior to Release 3.0 installed, you cannot upgrade directly to Release 4.2.

To upgrade to Release 3.x, see the *3.x ClearCase and MultiSite Release Notes*.

Upgrading to Release 4.2 does not require reformatting your VOBs, unless you are installing with the newer VOB format (schema 54). For more information on general VOB database structure, and for details on reformatting a VOB, see *Administering ClearCase*. Also, see the **reformatvob** reference page.

Upgrading to Release 4.2 from a release prior to 4.1 does require upgrading your storage locations; Release 4.1 added enhanced support for creating and managing storage locations. For details, see the section *Upgrading Storage Locations*.

General Issues with Upgrading

ClearCase Product Family Installation Notes provides information necessary to install the ClearCase family of products. Here is some general information to keep in mind about upgrading:

- ▶ Make sure that all views and VOBs are fully backed up. For information on backing up VOBs and views, see *Administering ClearCase*.
- ▶ You do not need to upgrade your license server or get new ClearCase licenses. Licenses work with any version of ClearCase product family software, and ClearCase 4.2 hosts can use a ClearCase license server running a 3.x version of the software.
- ▶ Be sure that VOB and view servers are upgraded before you upgrade client hosts; Release 4.x clients cannot access VOBs or views on hosts that are running a pre-3.x release of ClearCase.
- ▶ Updating your VOBs to use the latest VOB database schema—schema 54—requires that you reformat them. We recommend updating your VOB database schema only if your site clearly needs support for greater than 16 million records and VOB database file sizes greater than 2GB, or the improved user ID representation provided by SIDs. The installation procedure provides more information on this topic.

CAUTION: If you use MultiSite and update one or more replicas in a VOB family to the new format, you must update all other replicas in the family before the reformatted replicas exceed the database limit of the previous schema (53). If you do not, synchronization imports will fail at any replica that has not been updated.

- ▶ If you have modified any files in *ccase-home-dir* (C:\Program Files\Rational\ClearCase, by default), move them; if you do not, they will be lost when you install.

- You need not remove the previous version of ClearCase unless you want to change the location of your ClearCase installation directory.

CAUTION: If you are upgrading from Release 3.x and use the MultiSite synchronization scripts in directory *ccase-home-dir\config\cron*, you must move these scripts to another location before deinstalling. After installing Release 4.2, create the directory *ccase-home-dir\config\cron* and move the scripts into that directory. For information on switching to the MultiSite scripts provided with Release 4.2, see *Converting to New MultiSite Scripts and New ClearCase Scheduler* on page 84.

See also *Known Issues Related to Installation* on page 16.

Evaluating This Release of ClearCase

The way in which you evaluate Release 4.2 depends on which release of ClearCase you are currently running.

If you are running a release prior to 4.x and you want to evaluate Release 4.2, you can install Release 4.2 on one or more test systems in your existing environment of servers, clients, views, and VOBs and configure the test systems to use your 4.x license server.

If you are running Release 3.x and you want to evaluate Release 4.2 without disrupting your existing environment, you can install Release 4.2 on one or more test systems and configure the test systems to use your 3.x license server. You must configure one of the test systems as a ClearCase registry server. Then configure the other test systems to use that server as their ClearCase registry server. After this, you can create your views and VOBs on the test systems.

Alternatively, you can install Release 4.2 in evaluation mode on a test system. For more information on evaluation mode, see the manual *ClearCase Product Family Installation Notes*.

Feature Compatibility Issues Across Releases

Even the simplest ClearCase operation invokes a communications chain that can involve several components. For example, the act of checking out a file element involves a client program (running on the developer's workstation), which acts through a particular view (located on that workstation or elsewhere) and uses a particular VOB (typically located on a dedicated VOB server host). If all the components in this operation are running the same ClearCase release, compatibility is guaranteed.

Table 7, Table 8, and Table 9 show the compatibility paths if all hosts are *not* running the same ClearCase release. (In these tables, “client” means “ClearCase client software.”) In each table, a component in a row can use a component in a column if there is a “yes” at the intersection of the row and column. For example, the Table 7 shows that a 3.x view can use a 3.x VOB or a 4.x VOB, but a 4.x view cannot use a 3.x VOB.

Table 7 Compatibility: Views with VOBs

	3.x VOB	4.x VOB
3.x view	yes	yes
4.x view	no	yes

Table 8 Compatibility: Clients with VOBs

	3.x VOB	4.x VOB
3.x client	yes	yes
4.x client	no	yes

Table 9 Compatibility: Clients with Views

	3.x View	4.x View
3.x client	yes	yes
4.x client	no	yes

Specifically, these tables make two points:

- ▶ ClearCase 4.x clients can use only views and VOBs that reside on ClearCase 4.x hosts.
- ▶ ClearCase 3.x clients can use views and VOBs that reside on 3.x or 4.x hosts.

A ClearCase 4.2 client on UNIX can access a VOB on Windows NT using a snapshot view. However, the snapshot view storage directory and the VOB storage directory must be on servers running ClearCase 4.1 or later.

Release Information for Older Releases

If you are not upgrading from the most recent previous version of ClearCase, read the release notes for the intervening versions. These versions are located in the password-protected ClearCase Customer area of the Rational Software Web page; go to clearcase.rational.com and click **Documentation**.

NOTE: To enter the customer area, you must provide a user name and password, which is based on your ClearCase license ID and host ID. If you do not have this information, click **Cancel** in the **Username/Password** dialog box for instructions on how to get a user name and password. The release notes are available only to users of ClearCase Product Family products.

Upgrading to Client Installation Can Disable Existing Views or VOBs

Client installations of Release 4.2 on Windows NT can be one of two types: one that supports local views and VOBs, or one that does not. If a Windows NT computer contains view storage or VOB storage directories, upgrading to the second type of client installation disables any view or VOB whose storage directory is located on that computer. This behavior applies to all dynamic views and snapshot views created with the defaults suggested by the View Creation Wizard or **cleartool mkview**.

This situation occurs because upgrading to that kind of client installation removes the software necessary to run view- or VOB-server processes. (The view-server and VOB-server processes typically run on the computer on which the storage directory is located.)

Workaround for Computers with View Storage Directories

There are two options for upgrading Windows NT computers that contain view storage directories:

- Configure the computer either as a ClearCase client supporting local views and VOBs, or as a ClearCase server (which by definition supports local views and VOBs).
- Remove the views on this computer before upgrading to the client installation.

NOTE: Before removing the views, check in or cancel the checkout of all checked-out files and move any view-private files that you want to keep to a directory somewhere outside the view.

Workaround for Computers with VOB-Storage Directories

There are two options for upgrading Windows NT computers that contain VOB-storage directories:

- Configure the computer either as a ClearCase client that supports local views and VOBs or as a ClearCase server, which by definition supports local views and VOBs.
- Move the VOBs on this computer to another ClearCase computer before upgrading to the client installation.

NOTE: Moving a VOB can be a complicated process. Consider configuring the computer to support local views and VOBs instead. For details about moving VOBs, see *Administering ClearCase*.

Accessing Views and VOBs Disabled by an Incorrect Installation

Users who upgrade to a client installation and accidentally disable their views and VOBs can reinstall ClearCase, this time choosing to configure the computer either as a client supporting local views and VOBs or as a ClearCase server.

Upgrading Storage Locations

Prior to Release 4.1, view and VOB storage locations were supported only on Windows servers. Release 4.1 added enhanced support for creating and managing storage locations. To enable Release 4.2 clients to use storage locations set up in releases 3.2.1 and 4.0, you must upgrade those storage locations.

Upgrading a Storage Location from the Graphical User Interface

To upgrade a storage location:

1. On a Release 4.2 Windows server, start the ClearCase Server Storage Configuration Wizard from `ccase-home-dir\etc\SvrStor.exe`.
2. Select **Yes, start storage configuration now**. Click **OK**.
3. On the second page of the wizard, select the UNC path of the storage location that you want to upgrade, and click **Add**.

The **Storage Location Attributes** dialog box appears.

4. Enter a name for the storage location. Click **OK**.
5. Click **Next** and then **Finish**.

Upgrading a Storage Location from the Command-Line Interface

To upgrade a storage location:

1. On a Release 4.2 Windows client, issue the **cleartool mkstgloc** command. Specify the path of the existing storage location and the name of the storage location. For example:

```
cleartool mkstgloc -view upgraded_views \\saturn\bert\stgloc\vws
```

ClearCase recognizes that you are upgrading an existing storage location and prompts:

```
Advertise "old" Server Storage Location "\\saturn\bert\stgloc\vws"? [no]y
```

2. Enter **y** to have ClearCase register (advertise) the storage location with the new name.

Upgrading Storage Location for Interoperation Snapshot View Scenario

When you create a snapshot view, you can locate the view's storage directory either under the snapshot view's root directory or in a storage location. If you create a snapshot view on a ClearCase 4.2 client on UNIX, you can place the view's storage directory in an existing storage location on a Windows server if you take the following steps:

1. Upgrade the Windows server to ClearCase 4.2.
2. Upgrade the existing (pre-4.1) storage location from an interface as described in *Upgrading a Storage Location from the Graphical User Interface* or *Upgrading a Storage Location from the Command-Line Interface*.

1.7 VOB Schema Version 54 and Microsoft Active Directory

Rational recommends that you reformat your VOBs to use schema version 54 as soon as possible, especially if you are considering conversion or migration to Microsoft Active Directory. Schema version 54 provides improved support for multiple domains, domain migration, and Active Directory. Schema version 54 may be required when using ClearCase in a certain Active Directory environments.

1.8 Upgrading from ClearCase LT

Rational ClearCase LT can be easily upgraded to full-featured Rational ClearCase. ClearCase includes a tool that helps automate the upgrade process, though a few manual steps may be required to upgrade certain configurations. The upgrade preserves all of your ClearCase VOB data.

The *Upgrading ClearCase LT to ClearCase* chapter in the *ClearCase Product Family Installation Notes* explains the upgrade process in detail and describes two common upgrade scenarios.

1.9 MultiSite Compatibility with ClearCase

MultiSite is layered on ClearCase. To use MultiSite on a host running ClearCase 4.2, you must be running Release 4.2 of MultiSite.

MultiSite Release 4.2

ClearCase MultiSite Release 4.2 is fully compatible with ClearCase Release 4.2 client and server hosts:

- ▶ A MultiSite 4.2 replicated VOB can reside on any ClearCase Release 4.2 server host.
- ▶ Any ClearCase Release 4.2 client program can access and modify any replicated VOB residing on a ClearCase Release 4.x server host. Other client-VOB access is the same as that documented in *Feature Compatibility Issues Across Releases* on page 9.
- ▶ Installing MultiSite 4.2 does not require you to reformat VOBs or views.

Compatibility Issues Across MultiSite Releases

The following sections describe compatibility restrictions and issues when different sites are running different MultiSite releases.

Replica Creation

There are compatibility restrictions on creating replicas. You *cannot* create a replica on a Release 3.2.1 host from a replica-creation packet created on a Release 4.x host. If you want to create a new VOB family with replicas on Release 3.2.1 and Release 4.x hosts, the VOB from which you export the replica-creation packet must be located on a host running Release 3.2.1.

Replica Synchronization

Existing replicas hosted on systems running ClearCase 4.x can synchronize with existing replicas on systems running ClearCase 3.2.1. See the information on feature levels in *ClearCase MultiSite Manual*.

Upgrading to New Schema Format

If you decide to update one or more replicas in a VOB family to use the latest VOB database schema format (schema 54), you do not have to update all other replicas in the VOB family at the same time. However, you must update all other replicas in the family before the reformatted replicas exceed the database limit of the previous schema (53). If you do not, synchronization imports will fail at any replica that has not been updated.

Enabling VOB Replicas for Interoperation

In Releases 4.1 and 4.2, VOBs are enabled for interoperation (MS-DOS text mode) by default. When you create a new VOB on a host running Release 4.1 or 4.2, the VOB is enabled for interoperation. However, when you create a new replica, the new replica gets the same text-mode property as the original VOB.

For example, you run **mkreplica -export** on a Release 4.0 host to replicate a VOB that is not enabled for interoperation, and then run **mkreplica -import** on a Release 4.2 host. The new VOB replica is not enabled for interoperation.

NOTE: When you replicate a VOB, the new replica has the same text-mode property as the original VOB, but changes to the text mode are not included in synchronization update packets.

1.10 ClearQuest Compatibility with ClearCase

ClearCase 4.2 can be integrated with Rational ClearQuest software in two different ways:

- ▶ If you are using ClearCase with the Unified Change Management (UCM) process, a UCM-ClearQuest integration is built in to this release; you can use it with ClearQuest Version 2001A.04.00 or later.
- ▶ If you are using base ClearCase (that is, not using the UCM process), you can integrate with ClearQuest 1.1 or later using the ClearCase-ClearQuest integration 1.0.

ClearQuest-enabled UCM with ClearQuest MultiSite is currently in beta test. If you would like to participate in this beta program, please contact your Rational account representative.

1.11 Using ClearCase and Windows NT Server Domains

ClearCase is a distributed client/server application; many operations initiated on client hosts are completed by server processes elsewhere in the network. Therefore, all ClearCase hosts running Windows NT must belong to a Windows NT Server Domain, except as noted in *Administering ClearCase*. On all Windows 98 hosts, the Client for Microsoft Networks component in Network properties must be configured to log on to a Windows NT Server Domain.

To use ClearCase from either Windows NT or Windows 98, you must log on to a domain account (not a local, per-system user account). For more information about Windows NT Server Domains, see *Administering ClearCase*.

1.12 Known Issues Related to Installation

This section describes known installation issues.

Installing Internet Explorer 4.0.1 SP1

For some features of Release 4.2 to perform properly, Microsoft Internet Explorer 4.0.1 (Service Pack 1) or a later version of Internet Explorer must be installed on your system. This is required for the ClearCase Administrative Console (implemented as a set of snap-ins to the Microsoft Management Console), for use of the ClearCase Automation Library (CAL), and for use of the enhanced Diff Merge Tool with HTML files.

Note that it is not necessary to run Internet Explorer as a browser on the system; it simply needs to be installed.

Installing Java VM with Internet Explorer

Recent versions of Microsoft Internet Explorer no longer install the Java virtual machine (VM) by default. The VM is required for using the ClearCase Web interface. The only way to install it is to do a custom install of IE and select the **Microsoft virtual machine** component.

Setting Up the VisualAge for Java Integration

The ClearCase integration with Visual Age for Java enables you to use ClearCase source control functions, such as checking out, modifying, and checking in your files, without leaving the Visual Age for Java IDE or starting another application.

Before you can configure the VisualAge for Java for ClearCase integration, you must install both VisualAge for Java and ClearCase, in any order, and then run the VisualAge for Java Integration Configuration Wizard. This section describes all three procedures.

Installing VisualAge for Java

1. Run the installation program for IBM VisualAge for Java Version 3.5, Enterprise Edition. Follow the installation instructions and prompts.
2. During the installation, select the **Custom** option. In the list of components to install, select the **External Version Control** option.
3. Download and install the latest patch from www.ibm.com for the VisualAge for Java Version 3.5, Enterprise Edition.

Installing ClearCase

If ClearCase is already installed and running on your system, skip this procedure. If ClearCase is not installed, run the ClearCase installation program as you normally would, with the addition of the following steps.

1. Step through the installation to the **Standard or Custom Client Configuration** window. Click **I will create my own custom client configuration**, and click **Next** and continue with the installation.

2. In the **Site Defaults** window, click **No, I will customize this ClearCase installation**. Click **Next** and continue with the installation.
3. In the **Start Menu Entries** window, locate the list of ClearCase Administration Start Menu entries. Click **VisualAge for Java Integration Configuration**. Click **Next** and finish the ClearCase installation.

Running the Configuration Wizard

After both VisualAge for Java and ClearCase are installed, you must run the VisualAge for Java Integration Configuration Wizard. Select one of the methods listed here.

- If you installed ClearCase using the procedure titled *Installing ClearCase* in this section:

In your Windows taskbar, click **Start>Programs>Rational ClearCase Administration>Integrations >VisualAge for Java Integration Configuration**.

- If ClearCase was previously installed or if the **VisualAge for Java Integration Configuration** shortcut menu does not appear in the **Integrations** menu:
 - a. In your Windows Taskbar, click **Start>Run**.
 - b. In the **Run** window, enter the path to the file, **vaj_config.exe**, in the **bin** folder of your ClearCase installation. For example, a typical path is **C:\Program Files\Rational\Clearcase\bin\vaj_config.exe**.
 - c. Click **OK**.

Set CLEARCASE_PRIMARY_GROUP on Windows Systems

ClearCase access controls consider domain group membership information when determining a user's rights to access ClearCase data. Because of a bug in Windows NT, a user who logs on to a domain account may not be assigned the primary group specified by the Windows NT domain account management tools.

To work around this bug, we recommend that you set the user environment variable **CLEARCASE_PRIMARY_GROUP** to refer to the correct primary group. The value of this variable must be the name of an existing domain group that meets all of the following requirements:

- It includes the user as a member.
- It appears on the users group list.

This environment variable must be set on every ClearCase host. On Windows NT systems, you set the value of `CLEARCASE_PRIMARY_GROUP` using the System program in Control Panel. On Windows 98 or Windows Me systems, you must set value of `CLEARCASE_PRIMARY_GROUP` in the `autoexec.bat` file on each system that run ClearCase.

For more information on `CLEARCASE_PRIMARY_GROUP` and ClearCase access controls, see *Administering ClearCase*.

Slashes in Installation Directory Not Supported

The **ClearCase Installation Directory** box in the ClearCase Installation Wizard does not support slashes (/).

Reinstall When ClearCase/MultiSite or ClearQuest/Shipping Server Are Uninstalled

If you are using ClearCase/MultiSite and the Rational Shipping Server on the same computer and uninstall one of those products, the other is partially uninstalled and stops working. Uninstall both and reinstall the product that is needed.

ClearCase Doctor Issues Error During Install over Shipping Server

When installing ClearCase on a computer that has the Rational Shipping Server installed, ClearCase Doctor reports an error:

```
Your ClearCase Server Process is set to log on as a user local to this machine.  
It should be configured to log on to a Windows NT domain.
```

You can ignore this error message because the ClearCase installation creates the appropriate account.

Deinstalling ClearCase May Remove Web Interface Views

By default, views for Web interface users are created under the host data directory for ClearCase (`ccase-home-dir\var`). If ClearCase is deinstalled, the view directories are deleted, but the views

remain registered. To avoid leaving entries for nonexistent views in the ClearCase registry, do one of the following:

- Remove any views created by Web interface users before removing ClearCase from a Web server used to provide access to the ClearCase Web interface.
- Use the `-view_storage` option in the `ccweb.conf` file to designate some other location for Web interface views.

The `var` directory is not removed by the deinstall process. You must explicitly choose to remove the directory.

Installation of UCM Integration with Rational ClearQuest

To use the UCM integration with 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

Consider the following points:

- The feature level of the metaschema for ClearQuest 2001.03.00 database is 3. The feature level for ClearQuest 2001A.04.00 database is 5.
- A ClearCase 4.2 client requires a ClearQuest 2001A.04.00 client, because the integration of UCM with ClearQuest uses new ClearQuest API calls.

Table 10 shows the compatibility of different releases of ClearCase and ClearQuest, the UCM package revision number, and the ClearQuest database feature level.

Table 10 Integration of UCM with Rational ClearQuest

ClearCase release	UCM package revision number	ClearQuest database feature level	UCM/CQ integration supported?
4.1	2.0	3	Yes
4.1	2.0	5	No

Table 10 Integration of UCM with Rational ClearQuest

ClearCase release	UCM package revision number	ClearQuest database feature level	UCM/CQ integration supported?
4.1	3.0	3	No
4.1	3.0	5	No
4.2	2.0	3	Yes
4.2	2.0	5	Yes
4.2	3.0	3	Yes
4.2	3.0	5	Yes

To upgrade to Release 4.2 from 4.1 and continue to use your integration of UCM with ClearQuest, you must perform Step #1 and Step #2. Step #3 and Step #4 are optional.

1. Install ClearQuest.
2. Install the ClearCase client (or both ClearQuest and ClearCase simultaneously).
3. Upgrade your UCM-enabled ClearQuest schema with the new version of the **UnifiedChangeManagement** package.
4. Upgrade your ClearQuest user database to the new version of the schema.

Job Scheduling Mechanism Changes Affect Installation

In Release 4.0, ClearCase provided a job scheduling service, which sends e-mail notifications and supports remote administration with access control. The scheduler relies on two new data repositories:

- A database of tasks (executable programs or scripts) available for scheduling
- A database of jobs, or scheduled tasks

If you are installing Release 4.2 directly from 3.x, read the rest of this section.

The scheduling service changes the scheduling mechanism used in releases prior to Release 4.0.

- The use of **disprun** and **at** to run periodic ClearCase jobs is obsolete. To schedule and manage jobs, use the **cleartool schedule** command or the scheduling interface in the ClearCase Administration Console.
- The scheduling directory used in previous releases, *ccase-home-dir\config\cron*, is obsolete. As of Release 4.0, editable tasks reside in *ccase-home-dir\var\scheduler\tasks*, and standard (read-only) ClearCase tasks reside in *ccase-home-dir\config\scheduler\tasks*.

NOTE: The **at**-based mechanism for MultiSite jobs still works, but we strongly recommend that you use the new scheduling mechanism. Support for the old mechanism will be dropped in the next major release of ClearCase. See *Job Scheduling Mechanism Changes for MultiSite* on page 23.

A task must be defined in the task database before you can schedule the task. The task database is a text file, *ccase-home-dir\var\scheduler\tasks\task_registry*. A member of the *ClearCase group* can add task definitions to the task database by editing this file using a text editor.

Tasks that you define can reside anywhere in the file system, but the recommended location is *ccase-home-dir\var\scheduler\tasks*. This directory contains a task, **ccase_local_day.bat**, that is intended for user-defined operations to be run daily. The directory contains another task, **ccase_local_wk.bat**, which is intended for user-defined tasks to be run weekly. A member of the *ClearCase group* can customize these two tasks using a text editor or can create entirely new tasks.

The database of jobs is the file *ccase-home-dir\var\scheduler\db*. This is a binary file that you can read and edit only by using the **schedule** command or the scheduling user interface.

When you upgrade from 3.x, ClearCase installation takes the following actions:

- Moves any existing customized **ccase_local_day.bat** and **ccase_local_wk.bat** scripts from the directory *ccase-home-dir\config\cron* to the directory *ccase-home-dir\var\scheduler\tasks*.
- Deletes all ClearCase-installed standard scripts from the directory *ccase-home-dir\config\cron*, regardless of any changes to those scripts since ClearCase installed them.
- Deletes the directory *ccase-home-dir\config\cron* if it is now empty; otherwise, installs a **README** file in that directory warning that the directory will be deleted in a future release. If you have added any local scripts to the directory *ccase-home-dir\config\cron*, you must move them to another directory. The recommended location is *ccase-home-dir\var\scheduler\tasks*.

- Removes all standard ClearCase jobs from the **at** list of scheduled jobs. Any local customization of execution times of these jobs are lost; you must reestablish your customization using the new ClearCase scheduler.
- Installs standard ClearCase tasks in the directory *ccase-home-dir\config\scheduler\tasks*.

ClearCase also takes the following actions to initialize the task and job databases:

- Installs a template for an initial task database, which contains definitions for standard ClearCase tasks, as the file *ccase-home-dir\config\scheduler\tasks\templates\task_registry*. The **albd_server** uses this template to create the first version of the actual task database, *ccase-home-dir\var\scheduler\tasks\task_registry*.
- Installs templates for two customized tasks, **ccase_local_day.bat** and **ccase_local_wk.bat**, in the directory *ccase-home-dir\config\scheduler\tasks\templates*. The **albd_server** uses these templates to create initial versions of these tasks in the directory *ccase-home-dir\var\scheduler\tasks* if they do not already exist in that directory.
- Installs an initial set of job definitions as the text file *ccase-home-dir\config\scheduler\initial_schedule*. These job definitions rely on task definitions in the task registry template. The **albd_server** uses these job definitions to create the first version of the scheduler job database, *ccase-home-dir\var\scheduler\db*.

NOTE: Do not edit or delete any files in the directory tree whose root is *ccase-home-dir\config\scheduler*. For more information, see the **schedule** reference page.

Job Scheduling Mechanism Changes for MultiSite

MultiSite installation for this release takes the following actions:

- Installs standard MultiSite tasks (the synchronization scripts **sync_export_list.bat** and **sync_receive.bat**) in the directory *ccase-home-dir\config\scheduler\tasks*.
- Installs a sample set of MultiSite job definitions as the text file *ccase-home-dir\config\scheduler\multisite.schedule*. These job definitions rely on task definitions in the task registry (*ccase-home-dir\var\scheduler\tasks\task_registry*).

The MultiSite installation does not delete any MultiSite jobs on the **at** list of scheduled jobs.

If you are upgrading to MultiSite Release 4.2 and you want your existing export and import jobs to continue to work, do one of the following:

- Do not deinstall the previous release.
- Copy the existing scripts to a directory outside the ClearCase installation area. After installing Release 4.2, re-create the script directory and move the scripts there.

For information on converting to the new scripts and scheduling mechanism, see *Converting to New MultiSite Scripts and New ClearCase Scheduler* on page 84.

NOTE: Do not edit or delete any files in the directory tree whose root is `ccase-home-dir\config\scheduler`.

For more information, see the **schedule** reference page.

ClearCase Client Computers Need Consistent Character Encoding

All ClearCase clients computers that access a common set of VOBs and views must use a single common character encoding system. If all computers are not configured this way, ClearCase operations may fail or produce confusing or unreadable output.

For example, the Japanese SJIS and Japanese EUC encoding systems are available. They both represent Japanese characters but are incompatible. For this reason, you cannot mix SJIS and EUC in ClearCase clients.

Intermittent Problem with ALBD Server During Installation

Occasionally, when installing Release 4.2, the installation may display the following error message:

```
Error 1069: ClearCase ALBD could not log in due to wrong password.
```

(Note that you may have to check the Event Viewer in order to see this error.)

If you see this error message, follow the steps below to correct the problem:

1. Start **Control Panel>Services**. (On Windows 2000, start **Control Panel>Administrative Tools>Services**).
2. Select **Atria Location Broker**.

3. Click **Startup**. (On Windows 2000, click **Action>Start**).
4. Type a new password in the **Password** box, and confirm it in the **Confirm Password** box.
5. Click **OK**.
6. Click **Start**.

Attempt to Replace Read-Only `sitedefs.dat` File Silently Fails

Site preparation may fail to replace an existing `sitedefs.dat` in a release area, if either the file or whole directory is set to read-only by the network (and not by the file attributes). If this happens, no error is reported. Instead, the install reports that the siteprep has completed successfully, in spite of the fact that the `sitedefs.dat` file is not updated.

DDTS Integration Uses Wrong Environment Variable

The DDTS trigger scripts use the `CLEARCASE_PNAME` environment variable, but this EV is not set. Instead, the `CLEARCASE_PN` EV is set to the correct value.

Workaround: Set `CLEARCASE_PNAME` to `CLEARCASE_PN` at the beginning of each trigger that uses the EV.

Notice for expat XML parser

This product incorporates the expat XML parser 1.0 under the Mozilla 1.1 license available at www.mozilla.org/MPL/MPL-1.1.txt. The source code version of the expat XML parser is available at www.jclark.com/xml/expat.html.

Changes to Attache Installation

In this release, Attache shortcuts are installed in the same **Start** menu folder as ClearCase shortcuts if ClearCase is installed. If ClearCase is not installed, Attache shortcuts are installed in the Rational ClearCase folder. The default installation location is a sibling directory (named

Attache) of the ClearCase installation directory if ClearCase is installed. If ClearCase is not installed, Attache is installed in **Program Files\Rational\Attache**.

What's New in ClearCase

2

This chapter summarizes significant new and changed features in Release 4.2 of Rational ClearCase.

For Release 4.2, the only new documentation provided (aside from this document and the *ClearCase Product Family Installation Notes*) is the *ClearCase Product Family Documentation Supplement*, which describes features new in Release 4.2.

2.1 Summary of Changes in This Release

ClearCase Release 4.2 introduces the following significant changes:

- *Changes to UCM Integration with ClearQuest*
- *New UCM Features*
- *Multiple Site Default Files*
- *File Importer Utility*
- *Supporting Users Who Are Members of More Than 32 Groups*
- *Automatic Checkout of DO Versions During Builds*
- *Additional Option for Selecting Snapshot View Storage Directory*
- *Integration with Sun Forte for Java*
- *Integration with Visual Age for Java*
- *Changes to ClearCase Commands*
- *Documentation Changes*

2.2 Changes to UCM Integration with ClearQuest

This section describes changes to the ClearQuest/UCM integration.

Enabling ClearQuest to Work with UCM

Release 4.2 adds ClearCase support for the new release of ClearQuest. To enable a ClearQuest schema to work with UCM, you must apply a new package, **AmStateTypes**, to the schema. For details, see the *ClearCase Product Family Documentation Supplement*.

Changing to Default for “Check Assignment Before Work On” Policy

In Release 4.2, the default setting for the **Check Assignment Before Work On** policy has been changed to **not set**. To enable this policy:

1. Display the project’s property sheet.
2. Click the **ClearQuest** tab
3. Click the check box next to the **Check Assignment Before Work On** policy.
4. Click OK.

2.3 New UCM Features

Following are features new in UCM:

- Obsolete Objects in UCM Listings
- UCM Triggers
- Privileged Identities for PVOB Write Operations
- Component Tree Browser Enhancements
- Changes to ClearQuest-Enabled UCM Using MultiSite

Obsolete Objects in UCM Listings

By default, UCM listing commands do not list obsolete objects. A new option, **-obsolete**, includes obsolete objects in the listing. See the reference pages for **lsactivity**, **lsbl**, **lscomp**, **lsproject**, and **lsstream** in *ClearCase Product Family Documentation Supplement*.

UCM Triggers

ClearCase Release 4.2 adds support for UCM triggers on the following UCM operations:

- **deliver**
- **mkactivity**
- **mkbl**
- **mkstream**
- **rebase**
- **setactivity**

For information on how to use the triggers on UCM operations in Release 4.2, see the chapter, *Using Triggers to Enforce Development Policies* in the *ClearCase Product Family Documentation Supplement*. See also the reference pages for **mktrtype**, **mktrigger**, and **rmtrigger** in the *ClearCase Product Family Documentation Supplement*.

Properties information for triggers used with UCM objects is now shown on the **Firing Conditions** tab of the property sheet for a trigger.

If a client is running Release 4.1 or earlier, UCM triggers will not fire.

Privileged Identities for PVOB Write Operations

Commands that write to the UCM project VOB (PVOB) now require a privileged identity. The following commands write to the PVOB:

- **chactivity**
- **chbl**
- **chproject**
- **chstream**
- **clearjoinproj**
- **deliver**

- **mkactivity**
- **mkbl**
- **mkcomp**
- **mkproject**
- **mkstream**
- **rebase**
- **rmactivity**
- **rmb1**
- **rmcomp**
- **rmproject**
- **rmstream**
- **setlevel**

See the corresponding reference pages in *ClearCase Product Family Documentation Supplement* for details.

Component Tree Browser Enhancements

To reduce the amount of information that the Component Tree Browser displays for UCM streams and baselines, the **Filtering Options** dialog box was added. The filtering also reduces the amount of time necessary to load the component depicted on the tree. For streams, you can display no development streams, your own development stream only, or all development streams in the component. For baselines, you can display only the baselines of a given promotion level or higher, only labeled baselines, or obsolete baselines. For details, see the online help for the Component Tree Browser.

Changes to ClearQuest-Enabled UCM Using MultiSite

Rational ClearQuest Version 2001A.04.00 lets you use ClearQuest MultiSite to replicate ClearQuest databases. Note the following:

- This feature is in beta test. If you want to participate in this beta program, contact your Rational account representative.
- If you plan to link a UCM project with a replicated ClearQuest user database, see the chapter, *Setting Up a ClearQuest User Database* in the *ClearCase Product Family Documentation Supplement*.

2.4 Multiple Site Default Files

ClearCase now allows you to have multiple site defaults files for a release area. In some cases, your site may require multiple site defaults files. For example, if two groups both use ClearCase but need to work with different default settings (such as different **Start** menu commands or different registry servers), you can create one site defaults file for each group.

For instructions on using the expanded ClearCase Site Preparation from the release area, click **Help** in the dialog box. You can also find information in the section, *Running the ClearCase Site Preparation Wizard* in the *ClearCase Product Family Installation Notes*.

2.5 File Importer Utility

A new utility, **clearfsimport**, allows you to place source files under ClearCase version control without having to use one of the **clearexport** utilities. You can use it in UCM or base ClearCase. For details, see the **clearfsimport** reference page in the *ClearCase Product Family Documentation Supplement*.

2.6 Supporting Users Who Are Members of More Than 32 Groups

Release 4.2 supports the use of a new environment variable on Windows NT and Windows 2000 platforms. If the environment variable **CLEARCASE_GROUPS** exists for any user, ClearCase considers the semicolon-separated list of groups specified as the value of this variable first when determining (or displaying) which groups a user belongs to. For example:

```
CLEARCASE_GROUPS=domain\ClearCase Users;domain\group;domain\group
```

The list can contain domain or local groups, and need not contain the group specified in **CLEARCASE_PRIMARY_GROUP**, which is already treated specially if it has been specified. If the user is a member of additional groups not specified in **CLEARCASE_GROUPS**, ClearCase considers those groups after it has considered the groups listed in **CLEARCASE_GROUPS**, up to a limit of 32 groups.

Any user who is a member of more than 32 groups (domain or local) should set **CLEARCASE_GROUPS** to specify which groups ClearCase should consider when checking the user's access rights. **CLEARCASE_GROUPS** is not supported on Windows 98 or Windows Me.

2.7 Automatic Checkout of DO Versions During Builds

You can use the new `-c` option for the **clearmake** command and `-C` for the **omake** command to guarantee that any versioned derived objects (DOs) referenced in a makefile are checked out before they are rebuilt or winked in. This option causes **clearmake** and **omake** to examine each of the makefile's targets to verify that the target is visible in the view at the same path and is a checked-in, versioned DO. All such DOs are checked out before they are rebuilt or winked in.

If you define the environment variable `CCASE_AUTO_DO_CI`, the **clearmake** and **omake** commands check in any checked-out versioned DOs associated with a target after that target is rebuilt or winked in. These checkins are not audited, and the build reference time prevents subsequent builds of the target in the same build session from seeing the results of these checkins. If the target creates sibling DOs, target group syntax must be used in the makefile so that all siblings are subject to this new behavior.

All checkouts are reserved. The checkouts are not audited. Checkin operations preserve the time stamp of the DO as if **checkin -ptime** were used. The feature is fully compatible with **checkout** or **checkin** triggers which fire normally when the event occurs.

For more information, see the reference pages for **clearmake** and **omake** in *ClearCase Product Family Documentation Supplement*.

2.8 Additional Option for Selecting Snapshot View Storage Directory

In Release 4.1, if you created a snapshot view that did not use a server storage location, you could only colocate view storage under the root of your snapshot view directory. This resulted from the withdrawal in Release 4.1 of support for the **mkview -vws** option. Release 4.2 restores this functionality, which enables you to specify a non-located storage directory that is not a server storage location. See the **mkview** reference page in the *ClearCase Product Family Documentation Supplement*.

When using the **Choose Location for a Snapshot View** dialog box, you can also click **Advanced Options** and then click **Use explicit path** to specify non-located view storage that is not at a server storage location.

2.9 Integration with Sun Forte for Java

This release integrates SCC-level ClearCase functionality with Sun Microsystems's Forte for Java on these platforms:

- Windows 98
- Windows Me
- Windows NT
- Windows 2000

Users of the Java IDE initiate ClearCase actions using the file-system shortcut menus and a set of command icons on the Forte for Java main window toolbar. The following functions are available:

- **Check In**
- **Check Out**
- **Add to Source Control**
- **Undo Checkout**
- **Properties**
- **Compare to Predecessor**
- **Source Control History**
- **Version Tree Browser**
- **ClearCase Explorer**

ClearCase integrated help appears as a book in the Forte for Java online help, which you can access from the IDE **Help** menu. Context-sensitive help, invoked by pressing F1, is also available for the ClearCase commands.

2.10 Integration with Visual Age for Java

This release enhances the integration of SCC-level ClearCase functionality with the IBM VisualAge for Java Release 3.5 on the following platforms:

- Windows 98
- Windows NT
- Windows 2000

You can develop projects in the VisualAge for Java IDE while performing ClearCase version management using the file-system shortcut menus and a set of command icons on the VisualAge for Java main window toolbar.

The integration enhancements provide access to more ClearCase functionality from within VisualAge for Java. Specifically:

- Unified Change Management (UCM) **Join Project**
- **Merge Manager**
- **Create View**
- **Update View**
- **Find Checkouts**

In previous releases, the following ClearCase functionality was made available:

- Unified Change Management (UCM) **Deliver** and **Rebase** operations
- **Version Tree Browser**
- **Help** on using the integration

For more information on VisualAge for Java including new updates and limitations, read IBM's release notes on VisualAge for Java.

Setting Project Properties When a Project is Added to Version Control

After a project is added to External Version Control, users must set the project properties to tell VisualAge for Java, on a refresh project, to refresh the project from the external version control repository. To set the project properties in VisualAge for Java:

1. On the shortcut menu for the project, click **Tools>External Version Control>Properties**.
2. Click the **SCCI** tab.
3. Click **Refresh project from working directory**.

Handling of Resource Files in VisualAge for Java

There is a defect associated with adding a resource to a project that is under source control. The green arrow or yellow plus sign is not updated after the resource has been added as an element to ClearCase.

Known Problem with Lengthy Error Messages

If you add projects with very long names—including long class names—to source control, an error message is displayed. The error routine can not handle very long error messages that result from adding these types of projects to source control.

Modifications to External Version Control Icons

For this integration, two VisualAge for Java version control icons were modified. The ClearCase icon with the yellow triangle and green arrow was changed to a yellow diamond with an exclamation point in the middle; the green arrow remains. The icon indicates that an object in version control was modified by a save operation.

The icon with the yellow lock and green arrow was changed to a gray lock on top of the yellow diamond with the green arrow. This icon indicates that a checked-out object in version control was modified by a save operation.

See the topic *Version control icons*, in the Help for the ClearCase integration with VisualAge for Java.

2.11 Changes to ClearCase Commands

This section lists new commands and describes changes to existing commands.

New Commands

Table 11 lists new commands.

Table 11 New Commands in Release 4.2

Command	Description
<code>clearfsimport</code>	An importer that can be run in UCM views.

New Options and Arguments

Table 12 lists new options and arguments.

Table 12 New Options in ClearCase 4.2

Command	New option/argument	Use
clearmake	-c	Guarantees that versioned derived objects (DOs) referenced in a makefile are checked out before they are rebuilt or winked in.
diffbl	-predecessor [-activities] [-versions] <i>baseline-selector</i>	Displays differences between two baselines or streams nongraphically.
	-graphical <i>baseline-selector1</i> <i>baseline-selector2</i>	Displays differences between two baselines graphically.
	-graphical -predecessor <i>baseline-selector</i>	Displays differences between the specified baseline and its predecessor baseline graphically.
lsactivity lsbl lscomp lsfolder lsproject lsstream	-obsolete	Specifies that obsolete objects are to be included in the listing.
mktrigger	<i>ucm-object-selector</i>	Attaches a trigger to the specified UCM object.

Table 12 New Options in ClearCase 4.2

Command	New option/argument	Use
mktrtype	-ucmobject	Creates a trigger type that can be attached to individual UCM objects.
	-ucmobject -all	Creates a trigger type that can be attached to all project VOB objects.
	-component <i>component-selector[,...]</i>	Specifies components for the restriction list.
	-project <i>project-selector[,...]</i>	Specifies projects for the restriction list.
	-stream <i>stream-selector[,...]</i>	Specifies streams for the restriction list.
mkview	-vws <i>view-storage-pname</i>	Specifies the location for the view storage directory.
omake	-C	Guarantees that versioned derived objects (DOs) referenced in a makefile are checked out before they are rebuilt or winked in.
rmtrigger	<i>ucm-object-selector</i>	Removes a trigger from the specified UCM object.

Obsolete Commands

No commands are obsolete in this release.

2.12 Documentation Changes

For Release 4.2, the *ClearCase and MultiSite Release Notes* (this document) and the *ClearCase Product Family Installation Notes* are the only manuals that were updated. All new features in 4.2 are documented in the *ClearCase Product Family Documentation Supplement*, which is installed as `ccase-home-dir\bin\cpf_supplement.pdf`.

What's New in MultiSite

3

This chapter summarizes new and changed features in this release of Rational ClearCase MultiSite.

For more information about the commands described in this chapter, see the reference pages in the *ClearCase MultiSite Manual*. For information about the feature level requirements for using these features, see *Guidelines for Using Feature Levels* on page 72.

3.1 IsePOCH and chePOCH Detect Missing Oplog Entries

The **lsePOCH -actual** and **chePOCH -actual** commands now detect whether the remote replica or the current replica is missing oplog entries. If oplog entries are missing, the command prints one of the following messages:

```
Your replica ("replica-name") has fewer oplog entries for itself than  
"replica-selector" has for your replica.
```

```
To avoid permanent data loss, your VOB administrator must initiate the  
documented replica restoration procedure.
```

```
The replica "replica-name" has more oplog entries for "replica-selector" than  
"replica-selector" has for itself.
```

```
To avoid permanent data loss, its administrator must initiate the documented  
replica restoration procedure.
```

3.2 New Configuration File for Synchronization Scripts

You can modify the behavior of the `sync_export_list` and `sync_receive` scripts by creating a file named `MSimport_export.conf` and setting values in it. On UNIX, create the file in the directory `/var/adm/atria/config`. On Windows, create the file in the directory `ccase-home-dir\var\config`.

The file can include the following export setting:

`disable_export_locking = 1`

Disables use of the export lockfile, allowing multiple exports from a single replica to run simultaneously. Setting the value to `0` (default) enables use of the lockfile.

The file can include the following import settings:

`disable_import_locking = 1`

Disables use of the import lockfile, allowing multiple imports to a single replica to run simultaneously. Setting the value to `0` (default) enables use of the lockfile.

NOTE: Disabling import locking may cause import failures due to collisions. We recommend that you leave locking enabled unless there is frequent lockfile contention.

`proactive_receipt_handler = 1`

Causes an active receipt handler to look for other packets that can be imported and attempt to import them. By default, a receipt handler imports only the packet for which it was invoked. Under high load conditions or when packet have been split because of maximum size restrictions, packets may arrive before a preceding packet has been completely processed. Enabling proactive mode causes the receipt handler to import packets that may otherwise be stranded because delivery was premature or out of order.

3.3 Change to Packet Names Generated by Synchronization Script

When you use the `-compress` option with the `sync_export_list` script, the names of the shipping order and update packet now contain up to 40 characters of both the exporting and importing replica names. This naming scheme helps to ensure unique packet names.

Also, the time stamp now appears before the replica names, so the packets are listed in time order when you list the files in a shipping bay.

Restrictions and Guidelines for ClearCase

4

This chapter provides guidelines for and restrictions on using Release 4.2 of Rational ClearCase.

For information about previous releases, see *Release Information for Older Releases* in Chapter 1, *READ ME FIRST*.

4.1 Guidelines for Using UCM

The following section describes restrictions on using Unified Change Management (UCM) at ClearCase Release 4.2.

When Setting Up a Project, Make Components Read-Only Initially

You cannot change an integration stream's configuration to use an earlier baseline of any components that are marked as modifiable by the stream's project.

This may be a problem when creating a new project if the set of foundation baselines is not known in advance. After a modifiable baseline has been added to a project, it is not possible to roll back to an earlier baseline later on if building or testing indicates this is necessary.

To work around this limitation, initially specify your components to be nonmodifiable when creating a new project. After verifying that the project builds and tests correctly, update the project policies to allow modifications to any/all components.

Check In to Non-UCM VOB from UCM View if ClearQuest Enabled

If, in a UCM view, you check out or check in an element from a VOB that is not a UCM component, you should not have to select an activity, because that operation is not captured in a change set.

However, if you are in a view that is in a ClearQuest-enabled project, both the **Check Out** dialog box and the **Check In** dialog box force you to select an activity even though one is not really required.

Workaround: Select the activity; it will be ignored.

Using UCM in a MultiSite Environment

When you join a project in which the integration stream is not mastered by your current replica, you can create a development stream and view, but not an integration view. The Join Project Wizard displays a message that you will not be able to create an integration view, but when you click **Finish** the wizard attempts to create the integration view and then fails. If creation of the development view and stream succeeded, you can ignore the error.

Notes on Using the UCM-ClearQuest Integration

The UCM process in ClearCase is enhanced for sites that have installed Rational ClearQuest by a very tight integration between the activity management provided by UCM and the change request management provided by ClearQuest. Use the following guidelines with the UCM-ClearQuest integration.

Transitioning a ClearQuest-Enabled Project After Delivery

If the **Do ClearQuest action after delivery** policy is enabled on a UCM project, delivery of a ClearQuest-enabled UCM activity may result in an attempt to transition the activity to a **Complete** state type.

If the activity record has a field that must be filled in before it can transition to the **Complete** state, the program displays an error. An example is the **Defect** record type in the default **UnifiedChangeManagement** schema, whose **Resolution** field must be non-empty before it can be resolved.

Workaround: Modify the `UCU_CQActAfterDeliver` global script to include code similar to that below, which fills in the **Resolution** field when the activity is delivered.

```
' Defect record type requires Resolution field to be non-empty
' If record type is "Defect" ...
If (entity.GetEntityDefName = "Defect") Then
    ' If Resolution field is empty...
    If (entity.GetFieldValue("Resolution").GetValue = "") Then
        ' Fill in required field
        Call entity.SetFieldValue ("Resolution", "Fixed")
    End If
End If
```

See the ClearQuest API documentation for information on editing entities.

Schema Requires Submitted State

If you are applying the UCM package to a custom ClearQuest schema (as opposed to using the out-of-the-box Unified Change Management schema), be aware that this package depends on the existence of a state whose name is **Submitted**. If your custom schema does not include a **Submitted** state, you can apply the package to your schema by using one of the following methods:

- Before applying the package, temporarily rename the state that is the target of the Submit action to **Submitted**. After applying the UCM package, you may rename it to its original name.
- Create a dummy state called **Submitted**, and assign its state type to **Complete**. If you do this, you must also create a dummy action whose target is the **Submitted** state. After applying the UCM package, you may delete the dummy state and action.

ClearQuest Script Error Text Not Reported

Using the UCM-ClearQuest integration, you can customize the **Check Before Deliver** ClearQuest Visual Basic policy script. However, if the script as customized contains an error that causes the Visual Basic interpreter to display an error exception, the **Deliver** dialog box reports this error like this:

```
An error occurred during the deliver.
Unexpected error in deliver.
```

It does not report the actual error exception text, which would enable the user to diagnose the problem script.

Workaround: To see the error exception text, use the **cleartool deliver** command.

Must Stop ClearQuest Server to See Schema Upgrade

If you are using the UCM-ClearQuest integration, and upgrade a ClearQuest user database to a new schema revision, to see the change on a client host connected to that user database, you must stop the ClearQuest server and do the following:

- On Windows NT or 2000 clients
 - a. Start the Task Manager and click the **Processes** tab.
 - b. From the list, select **CQINTS~2.EXE** or **CQINTSVR11.EXE**.
 - c. Click **End Process**.
- On Windows 98 and Windows Me clients
 - a. Press CTRL+ALT+DELETE.
 - b. From the list, select **CQINTSVR11**.
 - c. Click **End Task**.

On UNIX clients, enter **cqintsvr stop** on the command line.

Changes to UCM CustomQuery1 Do Not Appear in Dialog Box

When using the UCM-ClearQuest integration, the list of records displayed in the list on the **Add To Source**, **Check Out**, and **Check In** dialog boxes is generated by running the **UCMCustomQuery1** query, which can be customized. (Note that to see the effect of your changes, you must use the **File>Save** command to save the query edits.)

However, if you copied the **Public Queries UCMCustomQuery1** query into your **Personal Queries** folder and edited it there, the changes are not immediately visible. To see your changes, you must stop the integration server process.

- On Windows NT or 2000 clients
 - a. Start the Task Manager and click the **Processes** tab.
 - b. From the list, select **CQINTS~2.EXE** or **CQINTSVR11.EXE**.
 - c. Click **End Process**.

- On Windows 98 and Windows Me clients
 - a. Press CTRL+ALT+DELETE.
 - b. From the list, select **CQINTSVR11**.
 - c. Click **End Task**.

After stopping the process on your computer, open the dialog box again. Further edits to **/PersonalQueries/UCMCustomQuery1** appear without your having to shut down the process again.

On UNIX clients, enter **cqintsvr stop** on the command line.

Cannot Import UCM-Enabled Records from ClearQuest Database

In general, you cannot import UCM-enabled records from a ClearQuest database; ClearCase cannot guarantee that UCM information that references an arbitrary ClearQuest database is correct. However, this restriction does not prevent data recovery in the event of a data loss. Records may be successfully imported into a ClearQuest database if all the following conditions are true:

- The records have been backed up from that database.
- The name of the database has not changed.
- The ClearCase UCM information in the record is still valid.

Changing Name of ClearQuest Record Type Causes Error

In the UCM-ClearQuest integration, if you change the name of the ClearQuest record type after activities have been linked to ClearQuest records of that record type, the integration displays an error message when you try to set one of those activities in a view. To change the name of a record type, do so before any activities are linked to records of that record type.

Opening Multiple Nested ClearQuest Forms May Cause Crash

The UCM-ClearQuest integration does not prevent you from opening a ClearQuest form, going to the form's **UnifiedChangeManagement** page, using the shortcut menu in the change set to open a ClearCase dialog box, and selecting **Activity Properties**, which opens a second ClearQuest form.

However, if you follow the above steps, the second ClearQuest form does not function correctly. In particular:

- ▶ The **Apply**, **Revert**, and **Cancel** buttons on the form have no text.
- ▶ If you attempt to go to the form's **UnifiedChangeManagement** page, and then close the form, you get this error:

```
Unable to load message ID 14090 from resources
```

ClearCase then crashes.

We recommend that you avoid using the above procedure to open a second ClearQuest form. Also, we recommend that you do not attempt to use duplicate copies of the same form.

Must Re-Run ClearQuest Maintenance Tool If ClearQuest is Reinstalled

If you upgrade ClearQuest, the registry settings that keep track of the current database are removed. You must run the **Rational ClearQuest Maintenance Tool** to reestablish the default database for the computer.

Availability of Check Mastership Policy

The ClearQuest page of the UCM project Properties Browser has a check box for the policy **Check mastership before deliver**. This is supported only with the UCM 3.0 package revision. If you are using the 2.0 package revision, the check box is unavailable.

4.2 Notes on Using the Base ClearCase-ClearQuest Integration

This section provides guidelines for using base ClearCase and ClearQuest together.

Change to Integration at ClearQuest Version 2001A.04.00

If ClearQuest version 2001A.04.00 or later is installed, the **ClearQuest** tab of the ClearQuest Integration Configuration GUI is disabled. With previous releases of ClearQuest, the integration used the information that you entered on this ClearQuest tab to update a ClearQuest schema. In ClearQuest 2001A.04.00 or later, use the Package Wizard, in the ClearQuest Designer, to update your schema as follows:

1. In ClearQuest Designer, click **Package>Package Wizard**.

2. In the Package Wizard, look for the **Release 4.2** and **ClearCase Upgrade 3.0** packages. If these packages are not listed, click **More Packages**, and add them to the list from the **Install Packages** dialog box.
3. If you are upgrading a schema that currently uses the ClearCase-ClearQuest integration from ClearQuest version 1.1 to version 2001A.04.00 or later, select **ClearCase Upgrade 4.2**, and click **Next**.

If you are enabling a schema to use the ClearCase-ClearQuest integration for the first time, select **Release 4.2**, and click **Next**.

4. Select the schema for the ClearQuest user database that you want to use in the integration with ClearCase. Click **Next**.
5. Select the record type of ClearQuest records to be associated with ClearCase versions. This record type must match the record type that you specify on the **ClearCase** tab of the ClearQuest Integration Configuration GUI. Click **Finish**.
6. Click **Database>Upgrade Database** to upgrade the ClearQuest user database with the new version of the schema.

Using ClearQuest with Long Version-Extended Pathnames

The base ClearCase-ClearQuest integration creates a **ClearCase** tab on your ClearQuest screen. On this tab, if you right-click **CC Change Set Objects** and then select **View Details**, the program displays data about a VOB element. If the version-extended pathname is too long to fit in the dialog box, it cannot be viewed in its entirety, because the form does not support horizontal scrolling by default. You may want to modify the form using the following procedure:

1. In the ClearQuest Designer, check out the ClearQuest schema you are using.
2. Click **Record Types-Stateless>cc_vob_object>Forms>cc_vob_object**.
3. Select each text box and double its height.
4. Right-click a text box and click **Properties**.
5. Click the **Extended** tab.
6. Select the **Horizontal Scroll Bar** check box.
7. Repeat Step #4 – Step #6 with the other text box fields.

8. Check in the schema.
9. Click **Database>Upgrade Database** to finish the changes.

If you wanted only the horizontal scrollbase on the name, do the following instead:

- In Step #3, select the **Name** text box and double its height.
- In Step #4, right-click the name text box and click **Properties**.
- Ignore Step #7, which asks you to repeat the instructions.

4.3 Restrictions on ClearCase Web Interface

The following restrictions apply to using the ClearCase Web Interface.

Restrictions on the Web Interface in a UCM Environment

If you are using the Web interface in a UCM environment, the following restrictions apply:

- You can only work on existing activities owned by you; you cannot create new UCM activities using the Web interface.
- You cannot deliver changes to an integration view.
- You cannot rebase your development stream.
- You cannot use the Web interface to view ClearQuest-enabled projects.

Interactive Triggers Fail When Accessed Through Web Interface

The ClearCase Web interface supports noninteractive triggers. Interactive triggers, such as those that attempt to read input or create a window, fail.

If a trigger attempts to read input using **clearprompt**, the ClearCase Web interface prints this error:

`clearprompt` is not supported in the Web interface

If a trigger attempts to read directly from standard input, it receives an error, because standard input does not specify a valid file descriptor.

In addition, any trigger failure in the Web interface context displays this error message:

```
Interactive triggers are not supported in the Web interface.  
If the trigger was interactive, it may have failed for that reason.
```

Trigger script writers can detect whether a trigger is running in the Web interface context by checking for the environment variable `ATRIA_WEB_GUI`. It is set to `1` if you are running in the Web interface context.

Changes to Files Not Checked Out May Be Silently Overwritten

If you use the Web interface to download (rather than check out) a file to your Web view and then modify the file, your changes to the file are silently overwritten if you download the file again from within the same view. The program assumes that the only changes to be saved are those made to checked-out files.

Restrictions on Comparison of New Element Types

The Web interface does not support graphical (tree view) comparison of XML file elements; the Web Compare tool displays a text-based comparison for elements of type `xml`. When comparing HTML files, the program displays the differences in the Compare screen as text, but includes hyperlinks to display the individual files appropriately formatted using your default browser.

In addition, because the Compare tool in the Web interface handles only text files, it does not support comparison of Rational Rose or Microsoft Word files.

Error When Checking in Large File from Windows NT Web Client

Windows NT 4.0 sends very large amounts of information to a Web server. This behavior causes the ClearCase Web interface to fail when attempting to check in very large files (on the order of several megabytes). This problem appears to be fixed in Windows 2000.

Host Name Resolution Must Be Enabled on Web Interface Clients

The Java program used in the Web interface attempts to connect to the Web server to transfer files. Web browsers only allow Java programs to open connections to the server from which the programs were downloaded.

To enforce this rule, the Web browser on the Web interface client must be able to resolve the Web server's host name to an IP address. If you use a host name in a URL that cannot be resolved by the client host, the Java program cannot connect to the server. In this case, Web-interface file-transfer operations such as checkout, checkin, and download fail.

If the Web server is being accessed through a firewall by means of a proxy server, the proxy server being used must support DNS lookup outside the firewall.

ClearCase Web Interface Problem in Overriding Primary Group

When the ClearCase Web server on Windows logs in a client, it sets the primary group to the designated primary group in the client user's domain account. In Release 4.0, you could not override this group setting. As a result, sites that use domain mapping to allow user accounts in multiple domains to share VOBs could not access those VOBs through the ClearCase Web interface.

Workaround: Specify a configuration variable in the `ccweb.conf` file, and add a value to the registry that enables domain mapping.

Adding the Variable to the `ccweb.conf` file

To enable a single Web server to support one primary group override, add the `-primary_group` variable with a *groupname* value to the `ccweb.conf` file. The allowable values for *groupname* are the same as for the `CLEARCASE_PRIMARY_GROUP` environment variable. The `ccweb.conf` file must be located in `ccase-home-dir\var\config`. If you need more than one primary group override, configure additional Web servers.

Setting the Registry

Typically, when domain mapping is used to allow users from multiple domains to access the same VOB, each user must create the **DomainMappingEnabled** value (set to **1**) in the `HKEY_CURRENT_USER\Software\Atria\ClearCase\CurrentVersion` registry key.

To enable domain mapping for a Web server, create the **DomainMappingEnabled** value in the **HKEY_LOCAL_MACHINES\Software\Atria\ClearCase\CurrentVersion** key on the Web server machine. The value must be of type **DWORD** and set to **1**.

If you log in directly to the machine instead of logging in through the Web interface, user values for **DomainMappingEnabled** override the machine value.

Conflict Between Netscape and Exceed X Windows Server

If you access the ClearCase Web interface using a Netscape browser on a Windows system and also use a version of the Exceed X Windows Server earlier than 6.0, do not let the Netscape window lose its focus to an Exceed window. Doing so causes the Netscape window to restart any Java applets it is currently running, which interferes with file-transfer operations, for example, download, checkout, or checkin.

Neither Internet Explorer nor version 6.0 of the Exceed X Windows Server display this problem.

4.4 Using Internet Information Server to Serve Web Pages from a VOB

If you intend to use Internet Information Server (IIS) to serve Web pages within a view and VOB, you must configure IIS to log on as a Windows NT domain user that has access to that view and VOB data, use this procedure:

1. Make sure that the views and VOBs serving the Web pages use NTFS, not FAT, for storage.
2. Start the **Services** Control Panel program.
3. Double-click **World Wide Web Publishing Service**; a **Service** dialog box appears.
4. Click **Manual** startup type, and then click **OK**.
5. Create a domain user who is a member of the same primary group as ClearCase users.
6. Make the user the **Anonymous Login** user for IIS:
 - a. Click **Start>Programs>Microsoft Peer Web Services>Internet Service Manager**.
 - b. Start the WWW service, if necessary.

- c. Double-click **Service** to display its property sheet.
 - d. Enter the user name in the format *domain\user*, for example, **rational\webclient**.
7. Start the view or views from which you want to publish and mount the VOBs you need.
 8. Start the IIS service.
 9. On the **Directories** tab, set aliases to directories in the VOB or VOBs.

IIS and ClearCase should now work together on the same computer.

NOTE: Whenever you restart your computer, always start views and mount VOBs *before* you start the IIS service.

4.5 Third-Party Integration Guidelines for ClearCase Release 4.2

ClearCase contains support for Visual Studio 6.0 (including Visual InterDev) tools that use the Microsoft Common Source Code Control Interface (SCC) integration. It also contains support for Microsoft Word, Microsoft FrontPage, Microsoft Office 2000, and Sybase PowerBuilder. This section contains guidelines on using ClearCase with integrated products.

Using ClearCase with Microsoft Web Tools

The ClearCase integration with Microsoft Web tools is documented in a chapter in *Administering ClearCase* on configuring a Web server for use with Microsoft Web tools. Release 4.x is integrated with FrontPage 98, FrontPage 2000, Visual InterDev, Microsoft's Save to Web Office 2000 functionality (Word, Excel, PowerPoint), and Microsoft Internet Explorer 5 (IE5) Web Folders.

In addition, follow the guidelines below when using ClearCase is integrated with the above programs and tools:

- ▶ For FrontPage 2000 in local mode with ClearCase Release 4.1, the following commands were removed from the **ClearCase** menu: **Home Base**, **ClearCase Details**, **View Profiles**, and **Browse Types in VOB**. The **ClearCase Explorer** command was added.
- ▶ If you have been running the FrontPage integration in local mode with ClearCase Release 4.0, you must upgrade to Release 4.2:

- a. Install Release 4.2 on your client.
 - b. Start the Web Authoring Integration Configuration Wizard. To do so, click **Start>Programs>ClearCase Administration>Integrations>Web Authoring Integration Configuration**.
 - c. Select **Local Mode Configuration**.
- Users/Groups that are granted Front Page Server Extensions (FPSE) **Author** rights must match the identities of the Users/Groups with **write** access to the Web content VOB. In particular, granting **Author** rights to **Everyone** or to the IIS **Anonymous** user is not supported.
 - The ClearCase-FrontPage Web server maintains a cache of source control information, including checkout status, user, time, and version. This cache is not updated when source control operations are performed using ClearCase tools such as the Version Tree Browser, or **cleartool**, rather than from within a Microsoft Web program like FrontPage. For this reason, we recommend that you perform all source control operations from within the appropriate Microsoft Web tool. In the integration with FrontPage 2000, the ClearCase commands **Update View** and **Refresh Source Control Status** and the **iisfix.bat** script can be used to resynchronize the cached source control information.
 - Use of FrontPage borders and themes can cause many extra source control operations to be performed, slowing integration performance.
 - As described in the online help for the integration, users access files using a shared snapshot view created for the ClearCase-Web tools integration on the ClearCase Web server; the view-tag is **_fp_hostname_default-web-alias-path**. If a Web uses the IIS Challenge/Response authentication method, this view must be located on the IIS Web server, and the VOB must either be on the same IIS Web server or on a UNIX VOB server configured to use CCFS.
 - If you are attempting to import an existing Web with FrontPage Server Extensions installed into a VOB, you must remove all **_vti_*** directories from the Web before using **clearexport_ffile/clearimport**.

Using ClearCase with Visual InterDev

The integration of Release 4.2 and Visual InterDev may cause corruption and data loss. The problem occurs when user A checks out a file and then user B checks out the same file; user A is permitted to check in before user B. When attempting to check in the file, user A receives an error message and the file becomes corrupt.

There are three ways to deal with multiple-checkout problems in Visual InterDev:

- Add all users who may potentially check out the same files at the same time to the ClearCase domain group. This gives users permission to check in any files checked out by another user.
- Enable simulated checkouts for all files in the Web content VOB. The actual checkout occurs at checkin. This deferral allows multiple users to successfully check out the same file at the same time. However, these checkouts appear only in the Visual InterDev GUI. To enable simulated checkouts, change the value of the registry key
HKEY_LOCAL_MACHINE\Software\Atria\ClearCase\CurrentVersion\SSAPI\Performance\SystemFiles from the default value to the string value *.
- Disable the multiple-checkout functionality. To do so, you must turn on a new registry key. After this new registry key is set, Visual InterDev enforces a single checkout model. To disable multiple checkout functionality, add the new registry key as a DWORD value:

HKEY_LOCAL_MACHINE\Software\Atria\ClearCase\CurrentVersion\SSAPI\FailCOIfAlreadyCO

If the value is set to **1**, a checkout fails if the object is already checked out.

Using ClearCase with Microsoft Visual Studio

To use the ClearCase integration with Visual Studio, users must do one of the following:

- Install ClearCase after installing Visual Studio.
- When installing Visual Studio, choose to do a custom install. Then choose to *not* either install Visual Source Safe or make Visual Source Safe the Source Code Control Program.

Using ClearCase with Microsoft Visual C++

ClearCase uses the Microsoft Common Source Code Control (SCC) interface to integrate with the Microsoft Visual C++ available through Microsoft Visual Studio. ClearCase has support for Visual C++ versions 5.0 and 6.0. You can switch between SCC-support versions 5.0 and 6.0, but only one version is enabled at a time.

The ClearCase SCC interface for Visual C++ 6.0 also supports Visual Basic 6.0, Visual J++ 1.1, and Visual InterDev 6.0.

Using ClearCase with Visual Studio components requires no special configuration on the part of the user. For more information, see *Developing Software with ClearCase* in online help.

Issues with Visual C++ on Windows 2000

If you install Windows 2000 on a computer that currently runs Windows NT with the Visual Studio integration and then reinstall ClearCase, the Visual C++ 6.0 Add-in toolbar for the ClearCase integration contains five Version Tree buttons. All five buttons start the Version Tree Browser. To correct the problem, remove the ClearCase toolbar and then re-add it:

1. Click **Tools>Customize** and click the **Add-Ins** tab.
2. Clear the **ClearCase** check box and close the dialog box.
3. Click **Tools>Customize** and click the **Add-Ins** tab.
4. Select **ClearCase** on the list and close the dialog box.

Using ClearCase with Microsoft Visual Basic

Disabling of the IDE During Project Debugging

Design of the Visual Basic IDE disables or unloads all add-ins while debugging a project. The ClearCase toolbar, which is an add-in, is disabled, and no ClearCase operations can be performed from the Visual Basic IDE while the debugger is running. ClearCase operations can be performed while debugging using the ClearCase Explorer.

ClearCase Tools Add-In Does Not Initialize with Visual Basic 5.0

In Release 4.0, a new add-in was created for Visual Basic 6.0. The add-in does not work with versions earlier than Visual Basic 5.0. If you use an earlier version, the following message appears:

```
ClearCase tools could not be loaded
Remove it from the list of available addins?
```

Because the purpose of this add-in is to provide VB users quick toolbar access to advanced ClearCase features, you can remove it from the add-ins list without affecting basic ClearCase functions such as checkin and checkout.

Problem Checking in Identical .frm Files in Visual Basic 6.0

By default, ClearCase does not create a new version of a file that is identical to its immediate predecessor. When you attempt to check in an .frm file that is identical to the checked-in version, the integration does not check it in. However, if the .frm file has an associated .frx file, the integration checks in the .frx file as a read-only file. To avoid this problem, set the option to allow identical checkins.

Pre-Checkin Trigger Causes Problem in Visual Basic Projects

In Visual Basic, when you attempt to add a project to ClearCase by clicking **Tools>ClearCase>Add Files to ClearCase**, the operation fails if the VOB in which the Visual Basic project resides has a trigger that requires users to enter a comment when checking in files. The Visual Basic IDE does not supply the comment that you enter in the **Add to Source Control** dialog box to the trigger.

To work around this problem, use ClearCase Explorer to add the project to source control. After you add the project to source control, checkin and checkout operations complete successfully from within the Visual Basic IDE.

FRX File Not Checked Out When Part of Visual Basic Group

In a Visual Basic version 6.0 project that is part of a Visual Basic Group, when you check out an .frm file (with an .frx file), ClearCase does not check out the associated .frx file automatically. This behavior may cause synchronization problems. When working with a Visual Basic 6.0 project that is part of a Visual Basic Group, be sure to check out both the .frm and .frx files.

Error Message When Opening Visual Basic 6.0 Project

When you open a Visual Basic 6.0 project that is checked in, the integration displays the following error message: Failed to update project location information in the host application. The integration displays this message because the Visual Basic project file is not checked out and the project location information cannot be updated. To avoid this message, check out the project file before you open the project.

Reopening Visual Basic 6.0 Project Fails to Update Project Information

When you use Visual Basic 6.0, a problem can occur if a project's source files reside in a dynamic view that is mapped to drive M. After you reload it, Visual Basic cannot reopen the project from the list of recent projects at the bottom of the **File** menu and displays the error message reopening recent project fails to update project information in recent project.

To work around this problem you can delete the Microsoft-created file **MSSCCPRJ.SCC** and then add the project to source control again.

Using ClearCase with Microsoft Word

Release 4.x includes integrations with Word 97 and Word 2000. To use either of these integrations, do the following:

1. Remove any existing user-defined integration package with ClearCase and Word from the system. If this is not done, the Release 4.x integration with Word may not install properly.
2. Run the ClearCase Word Integration configuration program; click **Start>Programs>ClearCase Administration>Microsoft Word Integration Configuration**. Note that Word 97 or Word 2000 must be installed before you run the configuration program for it to take effect.
3. If you have Word files stored under ClearCase control in a pre-4.0 VOB, follow the steps described in *Using the Integration with Pre-4.0 VOBs* on page 58.

Removing a User-Defined Integration

A user-defined integration, if it exists, is encoded in a Visual Basic script file with the extension .dot, located in the Word startup directory. To find the Word startup folder, follow these steps:

1. In Word, click **Tools>Options**.
2. In the **Options** dialog box, click the **File Locations** tab.
3. Double-click the **Startup** item on the list to open the **Modify Location** dialog box.
4. Right-click in the large list box in the center of the dialog box (the list box may be empty) to display the shortcut menu. Click **Explore** to start **Windows Explorer**. In Word 2000, the startup folder is displayed in the **Folder name** box in the dialog box.

Windows Explorer is rooted in the Word startup folder.

To remove a previous integration, remove the .dot file associated with it from your Word startup directory, or rename the file to have a different extension.

Using the Integration with Pre-4.0 VOBs

To use the Microsoft Word integration with Word file elements in a VOB created using a pre-4.0 release of ClearCase:

1. Install Release 4.2 on the VOB server and change the feature level of your VOB (using the **cleartool chflevel** command) to include the new element type. The correct feature level is 2. For more information, see *Guidelines for Using Feature Levels* on page 72.
2. Create the **ms_word** element type in the VOB. After you've finished this step, all new Word documents created in this VOB are created as the correct element type.
3. Convert existing elements created from Microsoft Word files to the **ms_word** element type.

Using the Tracing Mechanism

The Microsoft Word integration supports a tracing mechanism that can be used to help diagnose certain problems. Enable it by creating the DWORD registry key **HKEY_CURRENT_USER\Software\Atria\ClearCase\CurrentVersion\Word\Tracing Enabled** and setting it to **1**. You can leave the key in the registry when not in use by setting the value to **0**.

The tracing is in the form of message boxes that open immediately before commands such as **Check Out** or **Check In** are issued. This can be useful in determining the pathname of the document, or the name of the command that is about to be issued.

Note that the registry key is checked at Word startup, so changing it during a Word session has no effect unless you stop Word and restart it.

Deleting the ClearCase Menu Bar

If the ClearCase menu is somehow deleted and the attached template is then saved, that document, and any document subsequently opened using that template, loses access to the menu. This happens because menus and toolbars are modified in documents in Microsoft Word, not in the application. The ClearCase integration adds the **ClearCase** menu to the Word template file.

If you delete the menu, you can restore it by using the following procedure:

1. Open the document or affected template.
2. Click **Tools>Customize**, and click **Menu Bar**. That is, select the line by that name in the list control; do not simply select or clear the check box.

3. Click **Reset**.
4. Select the affected template file and click **OK**. Then close the **Customize** dialog box.

Microsoft Word Terminates Abruptly When ClearCase “SaveAs” is Initiated

If you use ClearCase Release 4.x, we recommend that you not initiate an **Add to Source Control** operation from the menu that appears when you right-click in the **SaveAs** dialog box in Microsoft Word. This may cause your Word application to terminate abruptly, and could possibly cause data loss.

Using ClearCase with Sybase PowerBuilder

Using the ClearCase integration with PowerBuilder requires some configuration steps. In addition, there are some differences between the integration with PowerBuilder 6.x and PowerBuilder 7.x.

Applying Patches to PowerBuilder 7.x

Before using the ClearCase integration with PowerBuilder 7.0 to 7.02, apply the latest PowerBuilder patch available for the file **PBSCC70.DLL**. You can download this patch from the Sybase FTP site at <ftp://psafpt.sybase.com/pub/private/pbpatch/pb701.weekly/202861.zip>. This patch is not needed for PowerBuilder versions later than 7.02.

Enhancing the ClearCase-PowerBuilder Integration

Use the following procedure to add a **Help** button to the ClearCase integration with PowerBuilder. After the integration is configured, PowerBuilder displays an icon on its toolbar for ClearCase Help.

1. Start PowerBuilder
2. Right-click the **Powerbar** (where the icons are located); on the menu, click **Customize**.
3. Select your icon by clicking the **Custom** option.
4. Select an icon, drag it to the **Powerbar**, and position it as desired relative to the other icons on the bar.
5. To separate the ClearCase **Help** button from others on the **Powerbar**, use one or more separator icons (located in the left corner of the set of possible icons).

6. After the new icon is positioned, a dialog box prompts you to enter the command line to be associated with the icon, as well as text to represent the icon in the Microhelp and when the cursor is positioned over the icon. Set the command line to the value **winhlp32.exe**
ccase-home-dir\bin\ph_int.hlp. Set the values of the **Item Text** and **Item Microhelp** boxes to **ClearCase Help**.
7. Click **OK** to finish the configuration.

ClearCase Integration Differences: Version 6.x and 7.x

New PowerBuilder 7.x functionality is reflected in the following differences between the ClearCase integrations with PowerBuilder 6.x and with 7.x.

- In 7.x, the **Source** menu includes the command **Add Objects**.
- In 7.x, there is no **Source>Create New Release** command; that functionality is provided by **Library>Create**.
- In 7.x, when you open the **Configuration** dialog box by clicking **Source>Configuration**, and then click **Advanced**, ClearCase displays an **Activity** option if your VOB is set up for UCM development.

4.6 Integration with Rational Rose: Migrating to Release 4.x

ClearCase Release 3.2.1 with patch **clearcase_p3.2.1.NT-10** provides the type manager mechanisms necessary to integrate with Rational Rose. You must configure the integration manually.

ClearCase Release 4.x provides more direct support for Rose VOB element types. The type manager **_rose** and the element type **rose** are predefined. You do not need to configure Release 4.x because Rose type manager operations (for example, Diff, Merge) work as intended.

Release 4.x provides the standard text diff/merge for the **_rose** type manager. When the Rose product is installed, the install program modifies the type manager configuration to use the Model Integrator diff/merge instead.

Migration Issues

The Release 3.2.1 integration procedure defines an element type called **rose_unit**. ClearCase Release 3.2.1 assigns the element type **rose_unit** to a new file element that has a Rose extension (such as **.mdl**, **.ptl**, **.cat**).

ClearCase Release 4.x includes a predefined VOB element type, **rose**. When you upgrade ClearCase servers to Release 4.x and raise the VOB family feature level to 2, the **rose** element type is available to ClearCase clients that have been upgraded to Release 4.x. New file elements that are created with Rose extensions are assigned the **rose** element type.

We recommend that you upgrade all ClearCase clients to Release 4.x at the same time. If your ClearCase client is running Release 3.2.1, new file elements that are created with Rose extensions are assigned the element type **rose_unit** even if the VOB server has been upgraded to Release 4.x.

NOTE: Upgrading ClearCase from Release 3.2.1 to Release 4.x and raising the feature level to 2 does not redefine or overwrite any user-defined element types that were created in a given VOB. If you created an element type called **rose** in a VOB at feature level 0 or 1, you must rename the **rose** element type before you can raise the VOB family feature level to 2.

If you used the Release 3.2.1 integration procedure, you will have two different element types for Rose elements after you upgrade to Release 4.x and raise the VOB family feature level to 2. The ClearCase type manager handles this situation. Both element types can coexist because they both use the **_rose** type manager. The mapping of file extension to element type is handled by the ClearCase **default.magic** file on ClearCase clients. The 4.x version of this file has mappings for both the **rose** and **rose_unit** element types, and all type manager operations work with any element type combination that can exist in a VOB.

After you upgrade ClearCase servers to Release 4.x, raise the VOB family feature level to 2, and upgrade all ClearCase clients to Release 4.x. We recommend that you then use **cleartool chtype** to change all file elements with the **rose_unit** element type to the **rose** element type. You can then remove the **rose_unit** element type from all unreplicated VOBs. You cannot remove element types from replicated VOBs, but you can run the following command at the master replica of the **rose_unit** element type to ensure that the **rose_unit** element type is not used inadvertently:

```
cleartool lock -obsolete eltype:rose_unit
```

Table 13 shows how the elements differ in the Rational Rose integration with ClearCase Release 3.2.1 and Release 4.x.

Table 13 Differences in Release 3.2.1 and 4.x Rose Integrations

	Release 3.2.1	Release 4.x
Rose element types	rose_unit	rose and rose_unit
Type manager	_rose	_rose
Rose entries in default.magic	Added by the Rose install program	Contain entries for rose and rose_unit
Rose entries for type manager _rose	Added by the Rose install program	Predefined
Element type rose_unit	Created by the user in the VOBS	Predefined

4.7 Diff Merge Issues

Several issues exist with the Diff Merge tool.

Diff Merge Tool Does Not Display Multibyte Characters Correctly

The Diff Merge tool does not display multibyte characters correctly.

Workaround:

1. In Diff Merge, click **Tools>Options**.
2. Click **Change**.
3. Change the font to one that displays multibyte characters correctly on your machine.

Number of Lines in Compared or Merged Files

Files that are compared or merged with the ClearCase Diff Merge tool on Windows 2000 must not have lines that exceed (approximately) 3 KB. Some font sizes may increase that limit to approximately 4 KB.

Some Diff Merge Customizations May Be Lost

The name of the marker for unaltered text in a Diff or Merge contributor pane was previously **No Change** in the **Options** dialog box. The new name is **Unchanged**. This changes the registry slightly; the text shown in the list box (in this case **No Change** or **Unchanged**) is the actual registry key under which the font characteristics (for example, color, bolding, italic) are stored.

As a result, any lines marked **Unchanged** revert to the application's default for that type of marker. Any modifications that the user may have made, for this marker only, revert to the default. Modifications for all other marker definitions are retained.

Useful Registry Settings for Diff Merge Tool

There are useful registry settings in `HKEY_CURRENT_USER\Software\Atria\ClearCase\CurrentVersion\Diff Merge` that cannot be set through the GUI. To change these settings, exit all Diff Merge sessions before changing the registry. If you do not, the values entered manually are overwritten when Diff Merge exits.

Tab size is a numeric value that determines the number of characters a tab character occupies. The default value for this key is **8**. If you set **Tab size** to **0** or less, it is overridden with **8** and is saved on exit.

Colorbar scaling factor sets the width of the color density bar in the Diff Merge tool as a percentage of the width of the vertical scroll bar. For example, if this value is **100**, the two bars are the same width. If the value is **50**, the color bar is half the width of the scroll bar. The default value for this key is **75**. If you set **Colorbar scaling factor** to a negative value, a value of **0** is used. A **Colorbar scaling factor** of **0** hides the colorbar.

4.8 Guidelines on Using the XML Diff Merge Tool

This section notes restrictions and special issues involved in using the XML Diff Merge Tool.

Restrictions on the Tool

As of Release 4.0, use of the XML Diff Merge tool is subject to the following restrictions as a result of its use of Version 1.0 of the XML **expat** parser:

- All entity declarations for entity references must be within the document; in other words, the constructs specified by the **standalone="no"** document declaration are not supported. (See the *XML 1.0 Recommendation Standalone Document Declaration* and **Entityref** sections (especially **Well-Formedness Constraint: Entity Declared**) for more information).

If an entity (other than the predefined entities) is not declared, a parser error message appears on input. In this case, input processing of the document stops, but the application proceeds.

Files referred to within the input file, by means of **SYSTEM** declarations, are read to find externally defined entities, but XML document content defined in these files is not interpolated into the document.

- There is no validation of XML documents, because the parser we use is not a validating parser. On the other hand, the tool tests for well-formedness; it issues an error message and exits upon traversal of a document that is not well formed.
- Because the parser only parses the internal DTD subset, rather than parsing an external DTD associated with an XML file, it does not handle documents that depend on the resolution of parameter entity references.
- There is no support for Unicode (UTF-16); the parser converts all the input encoding (for example, ISO-8859-1) to UTF-8 output.

In addition, the following restrictions also apply:

- There is no support for editing element attributes or PCDATA; users must make a choice between contributors to resolve conflicts, rather than modifying the result.
- There is no support for attribute-granularity merges; users must pick an element with all its associated attributes from a single contributor, rather than selecting some attributes from each contributor.

- The choices you make in merging different versions of an XML document are inherited hierarchically. That is, when you select an element to be included in a merged file, all the children of that element are selected as well. You cannot select an element from one contributor, and then replace a child of that element with the content of that child in a different contributor.
- Users cannot change or undo any choices made during the course of a merge; that is, you cannot alter an insertion, change, or deletion after you have selected it.
- Color customizations for the XML Diff Merge tool are controlled by the settings for the ClearCase text mode Diff Merge. You cannot customize the colors directly from the XML Diff Merge GUI; you can, however, affect colors in this GUI by modifying the colors used for text mode Diff Merge.
- The tool does not support the **merge -query** and **merge -qall** options. See the **merge** reference page for a description of these options.
- In the output file generated by the tool, nonterminal white space formatting is lost. However, PCDATA white space is preserved.
- The tool does not support the empty element tag syntax for output. Files containing `<tag/>` constructs are parsed correctly, but the output is of the equivalent form `<tag></tag>`.
- The XML Diff Merge tool displays characters correctly only if they can be represented by a single 8-bit byte. An extra character appears if you merge an XML file that contains an ASCII key higher than 127. Characters that require two or more bytes, such as UTF-16 characters and some UTF-8 characters, do not display correctly. Although XML Diff Merge accepts XML input in any of four encodings (ASCII, ISO-8859, UTF-8, UTF-16), the merged output file is always encoded in UTF-8. Therefore, we recommend using only ASCII or UTF-8 encodings for XML elements that may be merged.
- When merging XML files, if one contributor version has an XML declaration node, and one or more contributors do not have a declaration node, other nodes between the declaration node and the root node can go missing.

To work around this problem, make sure that all versions contain an XML declaration node. An example of an XML declaration node is as follows:

```
<?xml version="1.0"?>
```

- The XML Diff Merge tool does not process the **-to** switch properly. The **-to** switch specifies the name of the merged output file, and the name of a merge contributor. XML Diff Merge does not set the merge output name from **-to**; it prompts the user because it does not have a file name for the merge output.

Workaround: Enter the **-out** switch on the command line:

```
cleartool merge -graphical -to myfile.xml -out myfile.xml myfile.xml@@\main\LATEST
```

To specify a merge output file name while using the tool, you can also click **File>Save**.

Ordering of Files in GUI May Need Adjustment

If two or more contributors insert elements and these insertions are adjacent, the desired ordering in the merge output can be ambiguous. For example, it may not be possible for the tool to determine whether an insertion from contributor A should appear before a corresponding insertion from contributor B.

If the element ordering is ambiguous at a given merge point, the one that the tool choose may not be the one you want. Review all changes in the merge output to confirm desired ordering.

Checking Your Results

In a number of cases, the XML Diff Merge tool cannot evaluate a changed element correctly. Instead, changes to a single element are reported as the deletion of one element and the addition of an identically named element. Because of this limitation, we strongly recommend that you verify comparisons and merges done using the XML tool with the text version of the Diff Merge tool. We provide a button on the XML Diff Merge toolbar to enable start of a textual Diff Merge.

XML Diff Merge Functionality Note

When merging two XML files, after selecting one of two alternative elements from the contributor panes effectively deletes the unselected element. As a result, all children of the deleted element are deleted as well and cannot be selected on succeeding merges.

Creating Elements of Type `xml` and Creating New Versions of XML Elements

The `xml` element type is based on the `text_file_delta` type manager. It expects XML elements to be text files. A text file is assumed to have lines no longer than 8,000 characters each, and no character may be a binary `\000` (null) character.

ClearCase reports an error while creating an XML element or while checking in a new version of an existing element if the XML data does not look like a text file. If your XML data has more than 8,000 characters between line-terminating characters, its lines are too long for the `text_file_delta` type manager. If your XML data is encoded with multibyte characters, it appears to have binary `\000` characters when viewed as a stream of bytes.

To overcome these restrictions, use the `file` element type to store such XML data. The `file` element type can store any type of file and does not have the same restrictions as the `xml` element type. To compare and merge XML data that is stored as `file` element types, you need to invoke the XML Diff Merge tool directly. See *Invoking XML Diff Merge Directly*.

If you cannot create a new version of an element of type `xml`:

1. Cancel the checkout and save your checked-out data in a `.KEEP` file. For example:

```
cleartool unco -keep file.xml
```

2. Change the element type from `xml` to `file` by using the `cleartool chtype` command.
3. Check out the file.
4. Copy the `.KEEP` file to the checked-out file.
5. Check in the file.

Invoking XML Diff Merge Directly

To run XML Diff Merge directly:

1. Make sure the `ccase-home-dir\bin` directory is in your path.
2. Issue the `xmldiffmrg` command. For example to compare two versions:

```
xmldiffmrg -xcompare file1.xml file2.xml
```

To merge two or more versions using a common ancestor:

```
xmldiffmrg -xmerge -out file.xml.merge -base file.xml file1.xml file2.xml
```

The file names may be version-extended pathnames. You must use the `-xcompare` and `-xmerge` options instead of `-compare` and `-merge`, respectively.

4.9 Build Issues

The following sections describe issues with using ClearCase build tools.

Express Builds and Compatibility Between Releases

This section describes the behavior that occurs when you use ClearCase 4.x views with express builds on ClearCase 3.x clients. For more information on express builds, see *Building Software with ClearCase*.

3.x Clients and 4.x Views

Builds on 3.x ClearCase clients always produce shareable DOs, even if you use a view configured for nonshareable DOs, because 3.x clients do not recognize express builds.

If the view contains nonshareable DOs, you may get errors if you try to access those DOs.

4.x Clients and 3.x Views

Creating or using a view located on a 3.x host from a 4.x client is not supported.

Incomplete Configuration Records for Nonshareable Derived Objects

ClearCase tries to maintain complete configuration records for a derived object, even if you delete one or more of the derived object's sub-DOs. For example, you build **foo**, which uses **bar.obj**, and then delete **bar.obj**. Even if the sub-DO does not exist, you can still use the **catcr -recurse** command on **foo** to see how it was built.

However, this may not be true for a nonshareable DO with shareable sub-DOs. If you delete one of the shareable sub-DOs, the config record for the nonshareable DO is incomplete.

There are two ways to build a nonshareable DO that uses a shareable sub-DO:

- Set your view's DO property to shareable DOs and build a sub-DO. Then, set your view's DO property to nonshareable DOs and build a DO that uses that shareable sub-DO.
- Set your view's DO property to nonshareable DOs, and build a DO that winks in a shareable sub-DO.

The DOs can be in the same or different VOBs.

When the **catcr**, **clearmake**, and **winkin** commands encounter a nonshareable DO with an incomplete config record, they behave in the following ways:

- **catcr** suggests a rebuild.
- **clearmake** rebuilds nonshareable DOs with missing sub-DOs.
- **winkin -recurse** run on nonshareable DOs with missing sub-DOs prints errors, but does not fail.

To avoid problems resulting from incomplete config records, do not manually delete sub-DOs of nonshareable derived objects. Also, if you use makefiles and build tools (for example, C++ compilers that update a repository) that appear to delete sub-DOs in the course of a build, use the workarounds documented in *Building Software with ClearCase*.

clearmake Cannot Evaluate Directory Changes During Config Lookup

When you list a directory as an explicit dependency of a target, **clearmake** does not rebuild the target if the directory version changes.

4.10 Guidelines on Using the Administration Console

Use the following guidelines when using the Administration Console.

Accessing the ClearCase Customer Web Site from the Console

To access the ClearCase Customer Web site from the Administration Console, you must first set up your Microsoft Internet Options. You can do this either when you first install and configure Microsoft Internet Explorer, or manually using **Control Panel>Internet Options**. If these options (for example, firewall and proxy server settings) are not set up, the following message is displayed when trying to connect to the ClearCase Web site:

```
Internet Explorer cannot open the Internet site http://clearcase.rational.com.  
A connection with the server could not be established.
```

Refresh Toolbar Button May Vanish, Resizing a View-Private File's Column Headers

While displaying a view-private file in the ClearCase Administrator's Console, resizing its column headers or displaying the shortcut menu causes the **Refresh** toolbar button to be hidden. If this happens, click **Action>Refresh** action or right-click **Refresh**.

4.11 Domains Removed from a Trust List Cause Problems When Using VOB Schema 53

This note applies only to VOBs using the VOB schema 53, not to VOBs formatted using the schema (54) provided with Release 4.0.

You can change the contents of a domain's trust list with the User Manager for Domains, but the contents of a domain's trust list rarely change. Because of the way ClearCase implements security, removing domains from a domain's trust list can invalidate ClearCase security information. Restoring a removed domain to a trust list does not fix ClearCase's security data.

More specifically, if the domain you remove from a trust list contains ClearCase user accounts or computers that use ClearCase, then ClearCase protection errors may result. Symptoms of these errors are as follows:

- Certain operations, such as checkout, may fail.
- ClearCase may print numeric values when you expect user names.

To display user and group information, use the **creds** command.

Because of these potential problems, we recommend that you avoid removing domains from a domain's trust list. If a domain is removed from a trust list, contact Rational Technical Support for information on how to correct ClearCase's security information.

4.12 Print Preview for ClearCase Doctor Is Unavailable

The **Print Preview** command was removed because it was not functioning properly.

4.13 Error Opening config_spec During View Startup

At view startup, more than one process may need to access the view's configuration files. Prior to Release 4.2, the sharing mode used to open these files was too restrictive, resulting in occasional failures when trying to access these files. For Release 4.2, the sharing mode was adjusted so that all processes are granted the access they require.

4.14 Problems When Administrative VOBs Are Unavailable

Release 3.x introduced the concept of the administrative VOB, which is used by one or more other VOBs as a central repository of global type objects. See the **type_object** reference page for a description of this feature.

ClearCase users may see errors when the administrative VOB is unavailable. Following are examples of situations when this may happen:

- A user attempts to attach a version label, using a label type that was previously created automatically, as a local copy of a global label type. The ClearCase **mklabel** command tries to contact the administrative VOB that contains the global label type. If that administrative VOB is unavailable, the **mklabel** command fails.
- A VOB backup script attempts to lock the entire VOB object of **\vobs\proj\proj** before copying data to tape. For each administrative VOB used by **\vobs\proj\proj**, the ClearCase **lock** command tries to contact the administrative VOB. If any administrative VOB is unavailable, the **lock** command fails, which causes the backup script to fail.

To disable the above checking for a particular ClearCase command (for example, to keep working while an administrative VOB is offline):

1. Log on as administrator.
2. Set the environment variable `CG_PROCFLAGS` to the value `no_process`.
 - a. Open the **System** Control Panel.
 - b. Click the **Environment** tab.
 - c. Set the user variable `CG_PROCFLAGS` to the value `no_process`.
3. Execute the command.

4.15 Guidelines for Using Feature Levels

Follow these guidelines to determine when and how to use feature levels:

- If you have no existing VOBs on server hosts on which you will be installing Release 4.x, feature levels are irrelevant, and you can skip the rest of this section.
- The primary purpose of feature levels is to manage VOBs that are replicated (using ClearCase MultiSite) across server machines that are not running the same ClearCase release. For instructions on using feature levels in this context, see *ClearCase Feature Levels* in *ClearCase MultiSite Manual*.

After you install Release 4.x on a host where a 3.x VOB resides, all 4.x functionality becomes available except the following:

- UCM, including element-type merge behavior (see the **mkeltype** reference page)
- The element types **xml**, **html**, **rose**, **ms_word** and their associated managers
- The following operations on global types:
 - > **rename**
 - > **mkbtype -replace**
 - > **mklbtype -replace**
- The following MultiSite features:

- > Adding a file or directory to source control and assigning mastership of all newly created branches to the current replica

If the VOB family is at feature level 1, you can assign mastership of only the **main** branch of a new element to the current replica.

- > Nonmastered checkouts
- > Requesting mastership of a branch

For unreplicated VOBs, all Release 4.x features are available after you raise the 3.x VOB's feature level to 2. For replicated VOBs, all Release 4.x features are available after you raise the VOB family's feature level to 2.

See Chapter 7, *Setting Up VOBs in Administering ClearCase* for details on raising the feature level of an unreplicated VOB.

4.16 Restrictions on VOB Schema in Release 4.x

As of Release 4.0, there are a number of restrictions on the use of the larger VOBs created using the new extended VOB functionality (VOB schema 54):

- **reformatvob -rm** may not completely remove an old VOB database directory during the load phase of the reformat operation. If the reformat cannot be completed because there is not enough disk space on the host, remove the old VOB database directory manually. This directory has a name of the form *VOB-storage-directory\db.reformat*. After you remove this directory, run **reformatvob -load**.
- **reformatvob** uses the **space** command to calculate the amount of space needed for a reformatting operation. This fails for large database files, although the failure does not cause the reformat itself to fail.
- The **space** command cannot successfully run the **stat()** routine on large database files. As a result, the **cleartool space -vob -generate** command can fail. This, in turn, can cause the **Standard ClearCase Daily Tasks** task, supported as part of new administration functionality in Release 4.0, to fail. If you have a VOB with large database files, the failure of the **space** command is repeated nightly on scheduled jobs.

To avoid this problem, edit the scheduled job list so that it runs only on VOBs that do not have large database files. You can do this by modifying the **Daily Vob Space** task on the MMC console Properties sheet.

4.17 4.x Converters Are Incompatible with Previous Releases

As of Release 4.0, the converter file format was changed. If you need to use the **clearexport** and **clearimport** utilities to migrate source files to ClearCase control, you must use a 4.x version of the converter executables.

4.18 ClearCase Client/Server Requirement for Creating Storage Directories

ClearCase client systems can only create view or VOB storage directories on a ClearCase server system running the same release of ClearCase. For example, a ClearCase client system running Release 4.x cannot create a view or a VOB storage directory on a system running Release 3.2.1.

4.19 ccperl4 Is Discontinued in ClearCase Releases

As of Release 4.1, we no longer distribute **ccperl4**. The **ccperl4** tool was introduced in Release 3.0 to provide backward compatibility with earlier **ccperl** executables. Release 4.0 is the last version in which we distributed **ccperl4**.

4.20 Changes to Names of Trigger Environment Variables

In Release 1.1, a number of trigger environment variables were renamed. In Release 4.2, support for the old names was removed. Table 14 lists the old and new names.

Table 14 Old and New Names for Environment Variables (Part 1 of 2)

Old name	New name
CLEARCASE_ATTACH_LIST	CLEARCASE_ATTACH
CLEARCASE_ATTR_VAL	CLEARCASE_VAL
CLEARCASE_ATTR_VAL_TYPE	CLEARCASE_VTYPE

Table 14 Old and New Names for Environment Variables (Part 2 of 2)

Old name	New name
CLEARCASE_ATTTYPE_NAME	CLEARCASE_ATTTYPE
CLEARCASE_BRTYPE_NAME	CLEARCASE_BRTYPE
CLEARCASE_CHECKIN_FROM_PNAME	CLEARCASE_CI_FPN
CLEARCASE_ELTYPE_NAME	CLEARCASE_ELTYPE
CLEARCASE_FROM_VOB_PNAME	CLEARCASE_FVOB_PN
CLEARCASE_FROM_XPNAME	CLEARCASE_FXPN
CLEARCASE_HLINK_FROM_TEXT	CLEARCASE_FTEXT
CLEARCASE_HLINK_TO_TEXT	CLEARCASE_TTEXT
CLEARCASE_HLTYPE_NAME	CLEARCASE_HLTYPE
CLEARCASE_LBTYPE_NAME	CLEARCASE_LBTYPE
CLEARCASE_NEW_TYPE_NAME	CLEARCASE_NEW_TYPE
CLEARCASE_OBJ_IS_FROM	CLEARCASE_IS_FROM
CLEARCASE_OUT_PNAME	CLEARCASE_OUT_PN
CLEARCASE_PNAME	CLEARCASE_PN
CLEARCASE_TO_VOB_PNAME	CLEARCASE_TVOB_PN
CLEARCASE_TO_XPNAME	CLEARCASE_TXPN
CLEARCASE_TRTYPE_NAME	CLEARCASE_TRTYPE
CLEARCASE_VOB_PNAME	CLEARCASE_VOB_PN
CLEARCASE_XN_SUFFIX	CLEARCASE_XN_SFX
CLEARCASE_XPNAME	CLEARCASE_XPN

4.21 History Browser Produces Extremely Small Text on Japanese System

By default, the font used for text and captions in the History Browser is 6-point type. As a result, output in the History Browser on a Japanese language system is very hard to read.

Workaround: Click **View>Options>Display>Fonts** and select a larger font.

4.22 Change to Behavior of Keep checked out Check Box

If you selected this check box in previous releases, the view-private file that you added to source control would remain checked out. This behavior is consistent with that of the **cleartool mkelem** command. As a result, you could lose the contents of this file before it was truly part of the VOB. This was most likely to happen if you canceled the checkout.

At Release 4.2, the file is checked in and checked out. You can continue working on the file, but its contents at element-creation time are preserved, even if you cancel the checkout.

4.23 Do Not Change VOB/View Storage Directory ACLs on NTFS File Systems

On NTFS partitions, each ClearCase VOB or view storage directory has an access control list (ACL). Modifying the ACL in any way can render the VOB or view unusable.

Because the standard Windows NT file-copying tools (and some backup utilities) do not preserve file and directory ACLs, use the procedures in *Administering ClearCase* to copy, move, or restore a VOB or view storage directory.

4.24 NFS Client Issues

The following sections describe issues with various NFS clients.

Some Commands Need NFS or SMB Access to VOB Storage Directories

The following commands require NFS or SMB access to the VOB storage directory when it resides on a UNIX host:

- **lsvob -storage**

- **mkpool**
- **mktag**
- **register**
- **rename** (pools)
- **unregister**

Do Not Enable Automatic Mounting of NFS Directories

In NFS products with UNC support, do not enable automatic mounting of NFS-storage directories. If you enable automatic mounting, you may experience problems starting views and VOBs located on UNIX hosts.

4.25 Restart After Changing ClearCase Registry Server

Some ClearCase operations may not work correctly after you change your default registry server. Some symptoms include ClearCase shortcut menus that do not appear correctly or source control operations that fail in Microsoft Visual Studio. We recommend that you shut down and restart your computer after changing the registry server.

4.26 Dynamic Views Do Not Support Microsoft Access Databases

Because dynamic views do not support DOS sharing modes, do not use a Microsoft Access database from a dynamic view.

Microsoft Access uses a lock file (identified by the .ldb extension) to arbitrate access to the database. When a client accesses the database to read or to write, it creates the .ldb file. When a client stops accessing the database, it attempts to delete the .ldb file. In a file system that supports DOS sharing modes, such as a native Windows file system, if other clients are accessing the database, the .ldb file cannot be deleted.

In a dynamic view (which uses the MVFS, or multiversion file system), the .ldb file can be deleted by any client, so that the next client to open the database creates and uses a new .ldb file, which exposes the database to multiple writes to the same records. For more information on the MVFS and its known limitations, refer to *Administering ClearCase*.

Workaround: Use Microsoft Access databases only from snapshot views located in a file system that supports DOS share modes (such as a native Windows file system).

4.27 No Built-in Support for Shipping Server-Only Installation

The installation procedure on Windows NT for ClearCase does not automate a MultiSite shipping server-only installation. For more information on how to accomplish this, contact Rational Technical Support.

4.28 Dual-Boot Installation Failure

When installing ClearCase in Windows NT on a dual-boot computer (Windows NT and Windows 98), the installation encounters an assertion failure.

At the beginning of the installation, an error message appears stating something like this:

```
Assertion failed!  
Program: path-name  
File: file-name  
Line: line-number  
Expression: "Function not implemented: " ...  
For information on how your program can cause an assertion failure, see the  
Visual C++ documentation on asserts.  
(Press Retry to debug the application - JIT must be enabled.)
```

The message box contains three buttons: **Abort**, **Retry**, and **Ignore**.

Workaround: Follow this procedure to complete the installation:

1. Abort the installation (click **Abort** in the message box).
2. In the Windows NT registry, set the following registry key to 0:

```
HKEY_CURRENT_USER\Software\Microsoft\Windows NT\CurrentVersion\  
WinLogon\ParseAutoexec
```

3. Reinstall ClearCase.

4.29 Creating VOBs and Views on Windows 2000 Hosts

On Windows 2000 hosts, VOBs and dynamic views must be created with the storage directory on a partition that has a drive letter assigned. If the VOB or view storage is on a Windows 2000 mounted drive, local clients will not be able to access the VOB or view.

4.30 DDTs Integration Uses Wrong Environment Variable

The DDTs trigger scripts use the `CLEARCASE_PNAME` environment variable, but this environment variable is not set. Instead, the `CLEARCASE_PN` environment variable is set to the correct value.

The workaround is to set `CLEARCASE_PNAME` to `CLEARCASE_PN` at the beginning of each trigger that uses the environment variable.

4.31 Documentation Issues

The following sections describe problems in the ClearCase documentation.

Problems with Reference Pages

The following problems exist in the *ClearCase Reference Manual*.

Object-Creation Commands

The reference pages for object-creation commands (**chpool**, **cptype**, **mkattype**, **mkbtype**, **mkeltype**, **mkhlttype**, **mklbtype**, **mkpool**, and **mktrtype**) do not mention explicitly that the name specified for an object must not be a valid integer or real number. Be careful with object names that begin with **0x**, **0X**, or **0**, the standard prefixes for hexadecimal and octal integers.

clearexport_ffile

-l is an undocumented option for the **clearexport_ffile** command, which labels the imported version with the specified label. Existing instances of the specified label are replaced. To use the option, enter **-l label** after the **-s** option.

clearexport_ssafef

The documentation for **clearexport_ssafef** does not mention that labels on directories in **SourceSafe** are not exported.

clearmake

In this release, **clearmake** is supported in ClearCase LT, but the **clearmake** reference page does not list ClearCase LT in the Applicability section.

config_spec

As of Release 4.0, the **config_spec** reference page does not document creation and use of config specs for UCM development.

rgy_backup

The instructions for changing the backup registry server host are incorrect. The correct instructions are as follows:

1. Modify the **rgy_hosts.conf** file on the intended backup registry server to include the host name of the backup registry server as the second line of the file.
2. Execute **rgy_backup** on the backup registry server. After you do this, the backup registry server will include current registry information, which it requires to assume the role of the primary registry server.
3. Modify the **rgy_hosts.conf** file on each client to be served by the backup registry server, so that the second line of the file contains the host name of the backup registry server.

rgy_switchover

The **rgy_switchover** reference page is incorrect in the following ways:

- It indicates that the **-backup** option accepts a list of hosts. This is incorrect. You can specify only one host.

- The Restrictions section says that you must be a root user to run **rgy_switchover**. This statement is untrue. You can be any user. The third example in the reference page is incorrect. Ignore this example.
- The page contains incorrect information about switching registry server hosts. See the chapter *Moving, Renaming, and Backing Up the ClearCase Registry* in *Administering ClearCase* for the correct procedure.
- **rgy_switchover** can only modify configuration information on hosts on which ClearCase is running. This means that it is not be able to inform the old primary registry server of the switchover if the switchover is prompted by failure of the primary server.
- The degraded mode referred to in the **rgy_switchover** reference page does not exist. If a primary server is unavailable, clients attempting to contact a server fail until the server becomes available or **rgy_switchover** is run.

Problems with the ClearCase Product Family Documentation Supplement

The *ClearCase File Server* chapter of the *ClearCase Product Family Documentation Supplement* incorrectly states that Rational supports use of Samba 2.2 with ClearCase. The Samba version number should be 2.0.7.

In this release, **clearmake** is supported in ClearCase LT, but the **clearmake** reference page does not list ClearCase LT in the Applicability section. Also, Chapter 1 of the *ClearCase Product Family Documentation Supplement* states incorrectly that the **clearmake** reference page does not apply to ClearCase LT.

Problems with Online Help

If you start help by pressing F1 in an application window (context-sensitive help) and begin a series of jumps into the online documentation, you may see the error `help topic not found`, when in fact the topic exists. If you click **OK** in the error message box, the topic then appears.

Issues with Tutorials

Several issues exist with running tutorials.

Tutorial in Windows Environment

Before users can run the tutorials, the administrator must create view and VOB storage locations. To verify that this was done, users can enter the following commands on the command line:

- `cleartool lsstorage -view`
- `cleartool lsstorage -vob`

Each command must display at least one registered storage location. If either command does not display storage locations, the tutorial will not run. The tutorial scripts check for this situation during the verification step, and report failure.

Tutorials in a Mixed Environment

The ClearCase tutorials cannot be run on Windows client hosts that use UNIX servers. VOB creation is not supported across heterogeneous network configurations, and all ClearCase tutorials create private VOBs.

Restrictions and Guidelines for MultiSite

5

This chapter contains release notes for Rational ClearCase MultiSite Release 4.2. For information about previous releases, see *Release Information for Older Releases* on page 11.

5.1 Change in Display of Packet Expiration Value

If you select the **Use Default Expiration** check box for a storage class, the value displayed in the **Packet Expiration** box is **-1**. To display the actual value, display the **-default** class. If you clear the **Use Default Expiration** check box, you must change the **Packet Expiration** value to a number equal to or greater than 0. Otherwise, the **Use Default Expiration** check box is selected when you click **OK**.

5.2 **disprun** Utility Will Be Removed in Next Major Release

The **at**-based mechanism (the **disprun** utility) for scheduling MultiSite jobs is still included in this release. However, we strongly recommend that you transition to the use of the new scheduling mechanism. The **disprun** utility will be removed in the next major release of ClearCase. For more information on scheduling synchronization with the ClearCase scheduler, see the **schedule** reference page and *ClearCase MultiSite Manual*.

5.3 Specifying a Storage Location During Replica Creation

In this release, if you specify the `-stgloc` option in a `mkreplica -import` command, the command verifies that the storage location is on the new replica's host. If it is not, or if you specify the `-auto` option and no registered locations are on the new replica's host, the command prints an error message.

5.4 Export Retried if Object Modification Causes a Failure

In previous releases, if a synchronization export operation tried to access an element that was being modified by a user, the export failed. In this release, the export is retried several times if an error occurs because an element is being modified. You may see the following messages:

```
Database identifier (dbid) not found in database: 'dbid'.
```

```
...
```

```
Retrying this operation. If it succeeds, you may ignore the preceding 'dbid  
not found' error message. If the error occurs again, try the export again.
```

5.5 Name Change in shipping_server Mail and Logs

The mail sent by the `shipping_server` and the error messages created in the Windows Event Viewer now contain the phrase `The Rational shipping server` instead of `The Atria shipping server`.

5.6 Converting to New MultiSite Scripts and New ClearCase Scheduler

ClearCase and MultiSite Release 4.0 contained new synchronization scripts and a new method for automating synchronization. If you are upgrading to Release 4.2 from Release 3.x, follow the steps in this section to convert from the pre-Release 4.0 scripts and automation mechanism to the new ones.

NOTE: If you did not deinstall your old release of MultiSite or if you preserved the old scripts, your existing jobs continue to work. However, we recommend that you switch to the scheduler-based method as soon as possible. Note that the **disprun** utility will be removed in the next major release.

To convert from **at**-based automation to scheduler automation, use the following procedure on each replica host:

1. Make sure you have permission to schedule jobs; you must be on the scheduler's ACL. See the **schedule** reference page.
2. List all import and export jobs and receipt handlers. Import and export jobs are typically defined as **at** jobs, and receipt handlers are defined in the **MultiSite Control Panel**.
3. Determine which new scripts and options you need to use by reading the **sync_export_list** and **sync_receive** reference pages. Table 15 compares the old and new scripts.

Table 15 Old and New MultiSite Scripts

Old script	New script
sync_export.bat	sync_export_list -all -quiet 1
sync_export_one.bat	sync_export_list -quiet 1 -replicas <i>replica-name@vob-tag</i>
sync_import.bat	sync_receive -quiet 1
sync_poll.bat	sync_export_list -poll -quiet 1

4. If you must continue using any scripts in *ccase-home-dir*\config\cron (or any locally written scripts located in other directories), follow these steps:
 - a. Copy the scripts into the directory *ccase-home-dir*\var\scheduler\tasks.
 - b. Define tasks for the scripts (except receipt handler scripts) by editing the file *ccase-home-dir*\var\scheduler\tasks\task_registry. You must add the new tasks to the end of the file. For example, the following task is defined for the local script **sync_export_lex.pl**:

```
Task.Begin
  Task.Id:          110
  Task.Name:       "Sync Export Lexington"
```

```
Task.Pathname: sync_export_lex.pl
Task.End
```

Note that the `Task.Id` value must be unique.

5. Open the **MultiSite Control Panel** and update the paths in the receipt handler entries for all shipping classes.
6. Cancel all import and export jobs run by **at**.
7. (Optional) Remove all scripts in the directory `ccase-home-dir\config\cron`. Remove from their original locations any scripts you copied into `ccase-home-dir\var\scheduler\tasks`. (Do not remove scripts from `ccase-home-dir\var\scheduler\tasks`.)
8. Schedule synchronization jobs:

On the command line:

- a. Enter the `cleartool schedule -edit -schedule` command.
- b. Modify the existing MultiSite definitions or create new job definitions. These definitions can use the **MultiSite Sync Export** task, the **MultiSite Sync Receive** task, or the tasks you defined in Step #b in Step #4.

There are three preconfigured (and disabled) MultiSite jobs: **Daily MultiSite Export**, **Daily MultiSite Shipping Poll**, and **Daily MultiSite Receive**. To schedule any of these jobs, remove the line `Job.Schedule.LastDate`. You can also adjust `Job.Schedule.FirstStartTime`, `Job.Schedule.StartTimeRestartFrequency`, and `Job.NotifyInfo.Recipients` appropriately.

- c. Save and close the file, and type **yes** at the prompt `Replace the entire schedule?`

In the graphical interface:

- a. Start the **ClearCase Host Administration** console and click **Scheduled Jobs**.
- b. Modify the preconfigured MultiSite jobs or create new jobs.

There are three preconfigured MultiSite jobs: **Daily MultiSite Export**, **Daily MultiSite Shipping Poll**, and **Daily MultiSite Receive**. To schedule any of these jobs, double-click the job. On the **Schedule** tab, adjust the **Run** dates and times appropriately. On the **Settings** tab, adjust the notifications appropriately.

To create new jobs, click **Action>New>Job** and fill in the fields on each tab. The job can use the **MultiSite Sync Export** task, the **MultiSite Sync Receive** task, or the tasks you defined in Step #b in Step #4.

- c. Click **OK** in the **Job Properties** dialog box to save and schedule the job.

For more information, see the **schedule** reference page in the *ClearCase Reference Manual*.

5.7 Handling Pathnames That Contain Spaces

If the pathname of a receipt handler or a shipping order contains spaces, DOS “short name” resolution must be enabled for the file system on which the receipt handler or shipping order is located. This property is enabled by default. If this property is not enabled, the **shipping_server** cannot invoke the receipt handler or process the shipping order.

5.8 Using UCM and MultiSite

The following restrictions apply to use of UCM and MultiSite:

- You cannot request mastership of branches in UCM VOBs.
- If a UCM component is replicated, its associated UCM project VOB (PVOB) must be replicated.
- You must synchronize a UCM component and its associated PVOB at the same time.
- ClearQuest-enabled UCM projects can be replicated and synchronized. In addition to using ClearCase MultiSite to replicate and synchronize UCM project and component VOBs, you can use ClearQuest MultiSite (in beta release) to replicate and synchronize associated ClearQuest user databases. You must synchronize a UCM PVOB and its associated ClearQuest user database at the same time.

5.9 Limitation on Use of Magnetic Tape for Packet Transport

Although `mkreplica -export` and `syncreplica -export` can divide logical packets into several physical packets, do not try to place more than one physical packet on a tape. This limitation exists because `mkreplica` and `syncreplica` always write physical packets at the beginning of the tape. This problem has been reported in CPF change request #CMBU00017624 (old #19829).

5.10 Warning on Receipt of Packet from Earlier MultiSite Version

The packet protocol for MultiSite Releases 4.0, 4.1, and 4.2 is Version 3.0, and MultiSite Releases 3.2.1 and 3.2 are at Version 1.2. When a Release 4.x `multitool` reads a packet with the older protocol, it prints this message:

```
multitool: Warning: Version mismatch, software:3.0, packet:1.2
```

This message does not indicate a problem. It means one of the following things:

- The feature level of the VOB family is lower than the feature level of the receiving replica.
- The feature level of the VOB family is the same as the feature level of the sending and receiving replicas. However, when the sending replica created the update packet, it had not yet received a packet containing the information about the new VOB family feature level.

5.11 Do Not Use MultiSite to Clone a VOB

Do not use MultiSite to create multiple copies of a VOB in a single ClearCase region. Because the VOB UUID is identical for all replicas in a VOB family, and is stored in many structures within a VOB, there is no way to make the copy of the VOB unique. Creating and using multiple copies of a VOB in a single region causes `clearmake` and views to exhibit unpredictable behavior, may cause data loss, and is not supported by Rational Software.

5.12 Synchronization Error When Database Limit Is Exceeded

ClearCase Releases 4.0, 4.1, and 4.2 include support for a new VOB database schema. If you update one or more replicated VOBs in a family to the new schema (version 54), you do not have to update the other replicas in the VOB family immediately. However, you must update all replicas before one of the updated replicas exceeds the database limit of the previous schema (version 53). If you do not, replicas that have not been updated will not be able to import synchronization update packets from the updated replica.

When this type of import failure occurs, **syncreplica** output includes a VOB database error, and an error is written to the **db** log.

The **syncreplica** output includes an error like the following:

```
multitool: Error: Error from VOB database: ''\\vob.setup''.
```

The **db** log includes an error like the following:

```
09/20/96 10:40:49 db_server(19528): Error: DBMS error in "../db__lock.c" line
79
*** db_VISTA database error -909 - file record limit exceeded
09/20/96 10:40:49 db_server(19528): Error: DBMS error
09/20/96 10:40:49 db_server(19528): Error: db_VISTA error -909
```

To fix this problem, you must convert all replicas in the family to schema version 54. To display the schema version for a VOB replica, use the **cleartool describe vob:vob-tag** command. To display the schema version of the ClearCase release installed on your computer, use the **cleartool -ver** command.

5.13 Limitation on Editing Mastership Request ACL

In this release, you do not have to be logged on to a VOB server host to edit the mastership request ACL for a replica on that host. However, if you are not already on the ACL, both of the following conditions must be true in order for you to edit the ACL:

- You must be the VOB owner or privileged user.
- You must be logged on to a host in the same domain as the VOB server host.

5.14 Documentation Issues

In this release, the **MultiSite Help** command is accessible from **Start>Programs>Rational ClearCase Administration>MultiSite Help**. The *ClearCase MultiSite Manual* incorrectly uses **ClearCase Administration** in the menu path instead of **Rational ClearCase Administration**.

5.15 MultiSite Support on Windows Platforms

MultiSite runs on the Windows NT and Windows 2000 platforms. The *ClearCase MultiSite Manual* uses the term “Windows” to refer to these platforms.

NOTE: Replicated VOBs on a Windows server can be accessed from any ClearCase client host running Windows and from UNIX snapshot views.

Status of ClearCase Software Change Requests

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Noteworthy problems found in or resolved in Release 4.2 of Rational ClearCase are listed in the file **cc-issues.htm**.

You can find this file in two places:

- ▶ On your ClearCase CD, in the folder **Rational\doc\platform**, where *platform* is an architecture mnemonic like **ux** (for UNIX computers) or **nt** (for Windows computers).
- ▶ In the folder *ccase-home-dir\install* after you've installed the product.

Note that any problems relating to installation or setup of ClearCase are noted in the section *Known Issues Related to Installation* in Chapter 1, *READ ME FIRST*.

Status of MultiSite Software Change Requests

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Noteworthy problems found in or resolved in Release 4.2 of Rational ClearCase MultiSite are listed in the file **ms-issues.html**.

You can find this file:

- On your ClearCase CD, in the folder **Rational\doc\platform**, where *platform* is an architecture mnemonic like **ux** (for UNIX computers) or **nt** (for Windows computers).
- In the folder *ccase-home-dir\install* after you've installed the product.

Note that any problems relating to installation or setup of MultiSite are noted in the section *Known Issues Related to Installation* in Chapter 1, *READ ME FIRST*.

