

# **IBM Rational ClearCase, ClearQuest and MultiSite Upgrade**

*Version 7.1x Upgrade Guide*

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## Introduction

The purpose of this document is to provide a strategy and high-level procedure for an upgrade from version 7.0.1.x to 7.1.x.x of Rational ClearCase and Rational ClearQuest. There are references to related documentation which will be an important part of the information being provided and should be referred to as noted. This document is designed to be read by Administrators who are responsible for upgrading their organizations ClearCase, ClearQuest and MultiSite installations.

## 1 Executive Summary

This plan defines a strategy and high-level procedures for an upgrade from version 7.0.1.x to version 7.1.x.x of Rational ClearCase and Rational ClearQuest. Additional Team products such as IBM Rational RequisitePro, and TestManager will be assessed as needed and possibly added specifically to this document in a future draft.

This document is prepared using the example of ACME INC which has 5 global sites comprised of about 30 IBM Rational Change Management [CM] servers with client software installed on over 1800 desktops. This document will discuss the planning steps required to upgrade those sites to version 7.1.x of the Rational Product Suite.

### 1.1 Upgrade Objectives

Highlights of the version 7.1 upgrade for ACME INC are:

- Greatly enhanced remote client (CCRC) functionality.
- Improved performance in ClearCase Version trees.
- List your reasons for upgrade here.

### 1.2 Upgrade Strategy

First: Upgrade the test environment and perform regression testing on the sev 1 and sev 2 use cases.

Second: Upgrade production CM Servers to version 7.1.x using a phased approach.

Third: Upgrade production clients, over a designated period.

### 1.3 Level of Effort

Upgrading to a new release will require a significant effort on the part of the CM team:

- This is several weeks of work on the part of the CM administrative staff.
- Desktops can be upgraded in phases using the silent Enterprise Install method.

### 1.4 About this Document

This document is divided into three sections:

**Executive Summary** - objectives, overall strategy, and resource requirements.

**Version 7 Upgrade Plan** - upgrade process for ACME.

**Version 7 Upgrade Audit** - current environment and the technical impact of the upgrade.

The first iteration of this document provides a working outline and a first cut at an upgrade strategy.

The next iteration needs to continue to refine this plan, making it more specific, including definition of:

- stakeholders and resources
- additional Team products besides ClearCase and ClearQuest that need to be handled during upgrade
- specific features to implement
- an upgrade schedule

## Version 7 Upgrade Plan

This section describes the upgrade process – planning, testing, and deployment for the ACME environment.

It is defined for the current ACME environment, specifically:

- IBM AIX and Oracle Solaris VOB, View Servers currently running version 7.0.1.x
- Microsoft Windows 2000 Rational Web Platform (RWP) Servers running version 7.0.1.x
- Windows 2000 clients currently running Rational version 7.0.1.x
- ClearQuest integrated with Unified Change Management (UCM)
- ClearQuest MultiSite & ClearCase MultiSite locations
- Oracle 9i ClearQuest databases

## 2 Upgrade Planning

This plan is the first iteration in the upgrade planning process. It provides requirements and a framework for the upgrade. Additional iterations need to drill down into further detail into each area.

	Description	Notes
2.1	Perform Current State Assessment	Gather details on all servers and clients
2.2	Perform Technical Upgrade Audit	Review upgrade docs, release notes and tech notes specific to ACME environment
2.3	Determine which features to implement	Find feature headlines in the release notes; details are in product documentation or product itself
2.4	Identify resources and Stakeholders	Who is going to do the work; who is going to care; who is going to help ensure the desktop rollout happens
2.5	Define upgrade test strategy and infrastructure	Include role-based workflow regression tests
2.6	Define communications plan	When notices go out; email aliases of stakeholders, leads and users
2.7	Iterate plan	This becomes a good template for future upgrades
2.8	Schedule upgrade	Give plenty of notice since this requires time from all users

## Planning Checklist

### 2.1 Perform a Current State Assessment

The table below highlights the current states of the Rational Products in the ACME global sites.

Product Name	Version	Platforms	Key Requirements / Limitations
Rational ClearCase	7.0.1.x	AIX, Solaris, Windows 2000	Schema 54 Feature Level 5 List your environment specs here
Rational ClearCase Remote Client	7.1.x.x	Windows 2000	CMServer 7.1.x.x Implementation <i>Input your specs</i>
Rational License Server	7.0.1.x	Windows 2003 server, Solaris 2.8	Rational product version compatibility issues <i>Input your specs</i>
Rational ClearQuest	7.0.1.x	Windows 2003 Server, AIX, Solaris,	Oracle 9i Database <i>Input your specs</i>
Rational ClearCase and ClearQuest MultiSite	7.0.1.x	Solaris, AIX	Product dependency on VOB synchronization and Replication <i>Input your specs</i>

### 2.2 Perform a Technical Upgrade Audit

In preparation of the upgrade we will need to verify the actual status of each of the servers, operating system versions, Rational Product level, and network accessibility to ensure that they meet the minimum requirements for the upgrade to version 7.1.x of Rational Products.

Populate this table listing all of the Hardware to be upgraded and the software version dependencies

Server Name	Installed Products	OS	Location	Rational Product Interdependency	Third-Party Dependency
Acmeosg75	ClearCase 7.0.1.x ClearQuest 7.0.1.x	Solaris 8	Quincy/WW	ClearCase, ClearQuest, MultiSite, CCRC , TestManer, RequisitePro , License Server	Oracle 9i



## 2.2.1 Verify System Requirements in the following locations:

- Appendix A
- System Requirements: <https://www.ibm.com/support/docview.wss?uid=swg21302974>

Some of the issues of concern at ACME regarding system requirements are the following:

- ClearCase Remote Client (CCRC) not supported on Solaris 8
- 64 bit zLinux support only on zseries for Redhat Enterprise 4 and 5

## 2.2.2 Read the Installation and Upgrade Guides

This document highlights the ACME-relevant components of the upgrade process. That said, whoever is responsible for managing the upgrade needs to understand the detailed documentation, listed in the Appendix.

Here are the general considerations to note when upgrading from version 7.0.x to 7.1.x

- To run Rational ClearQuest on the same computer with Rational ClearCase, both products must be version 7.1.x.
- When installing Rational ClearCase version 7.1.x and Rational ClearQuest version 7.1.x on a client host that has earlier versions of the applications installed, you must first uninstall all Rational ClearCase and Rational ClearQuest components. After you uninstall these components, then install Rational ClearCase version 7.1.x and Rational ClearQuest version 7.1.x in any order.
- If you plan to upgrade the servers, upgrade them in this order: the license server, the registry server, the VOB, and view servers.
- Before upgrading to a new release, you must complete all deliver operations that are in progress.
- On Linux and the UNIX system, note that the contents of /var/adm/atria is preserved as /var/adm/atria.preserve.

### 2.2.2.1 ClearCase Phased Upgrade

To upgrade from version 7.0.xx to 7.1.x in phases:

1. The license server,
2. The registry server,
3. The VOB servers,
4. The View servers.
5. Rational ClearCase Clients

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Note: Upgrade the Rational ClearCase registry server host before any Rational ClearCase MultiSite replica server hosts. You must install Rational ClearCase on your Rational ClearCase registry server host before you install it on any other Rational ClearCase host, particularly Rational ClearCase MultiSite VOB replica servers.

### 2.2.2.2 ClearQuest Phased Upgrade

To upgrade from version 7.0.xx to 7.1.x in phases:

1. Upgrade Rational MultiSite synchronization servers and Web servers.
2. Upgrade Rational ClearQuest clients.
3. Upgrade all Rational ClearQuest servers
4. Raise the schema repositories and user databases to feature level 7. (optional)
5. Implement new features and upgrade packages to version 7.1.x.

### 2.2.3 Review support tech notes

The documentation above provides known details as of the product release of 7.1.x in December 2009. As ACME gets closer to the upgrade date, search the Rational support database for each product for the latest information (search for "7.1.x"):

<http://www.ibm.com/software/rational/support/>

## 2.3 Determine which new features to implement

Review the new feature list for the products and determine which new features you would like to implement. This may require additional actions for testing and documentation.

Included is a high-level list of the new features for your review in the sections below:

### 2.3.1 New Features in Rational ClearCase Version 7.1.x.

- [Rational ClearCase and Rational ClearCase features](#)
  1. [Atomic checkin operations](#)
  2. [Primary group intersection algorithm](#)
  3. [Set the concurrency level in clearmake builds](#)
  4. [Clone UCM baselines](#)
  5. [Enable the Japanese user interface for the base ClearCase integration with Rational ClearQuest](#)
  6. [Support for Solaris branded zones](#)
  7. [Performance improvement in Windows version tree browser](#)
  8. [Suppressing unnecessary clearfsimport checkouts](#)
  9. [Treatment of redundant packets by multitool sync replica](#)
  10. [Suppressing the importation of superfluous MultiSite oplogs](#)
  11. [Behavior of default scheduled jobs has changed](#)
  12. [Restrictions on moving a version to a different activity implemented in ClearQuest-enabled UCM](#)

- [Rational ClearCase Remote Client \(CCRC\) features](#)
  13. [Support for external, 3rd-party Compare/Merge Providers](#)
  14. [Mylyn task integration](#)
  15. [New support for transactional checkins](#)
  16. [Enhanced support for Branch Types](#)
  17. [Enhanced support for Label Types](#)
  18. [Enhanced support for Hyperlink Types](#)
  19. [Enhanced support for ClearCase UCM Activities](#)
  20. [Enhanced support for ClearCase UCM Components](#)
  21. [Enhanced support for Change Set view](#)
  22. [Enhanced Properties view](#)
  23. [New and enhanced Preferences](#)
  24. [Updates](#)
- [Rational ClearCase z/OS features](#)
  25. [Impact Analysis](#)
  26. [Parameterized Build](#)
  27. [Remote Build](#)
  28. [TSO Client](#)
  29. [Other enhancements](#)

### 2.3.2 New Features in Rational ClearQuest Version 7.1:

- New Rational ClearQuest Web client with capability equivalent to the native client
- New command line interface (CLI)
- Rewritten Rational ClearQuest Designer, with new features to reduce the time you need to spend on schema design
- Rewritten import tool, with multi-platform support (Microsoft Windows, Linux, and UNIX)
- Out-of-the-box ALM schema: integrated with Rational ClearCase UCM and IBM Rational RequisitePro
- Enhanced security: FIPS (Federal Information Processing Standards) 140-2 encryption
- Enhanced, flexible, "pull-data" reporting
- CM Server and CM API provide robust infrastructure for Rational ClearQuest and Rational ClearCase

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## 2.4 Identify Resources and Stakeholders

### 2.4.1 Stakeholders in Upgrade Process, Scheduling, and Implementation

Determine who you are going to involve in the scheduling and rollout of the upgrade.

Whose commitment do you need to ensure that desktop upgrades happen across all projects? Who will take action if an organization is not getting it done in the agreed upon time?

### 2.4.2 Resources for Implementing the Upgrade

Allocate resources for:

- Second iteration of planning
- Regression testing
- Project management of the upgrade
- Upgrading the servers
- Coordinating the upgrade of the clients

For the purpose of the client upgrade, coordinate down time and next steps with your customers to determine optimal upgrade windows for those teams.

## 2.5 Define Release test strategy and infrastructure

Test strategy balances level of effort against level of risk. As of November 2010, version 7.1.2 has been in the field about a month. While 7.1 has been available for about 2 Years. We assume that the products are quite stable, due to internal testing and validation. However, implementing the latest updates to 7.1 will require a higher degree of testing rigor because it has not been deployed by multiple clients in the field:

- Testing against ACME-specific customizations (triggers, hooks, scripts, documentation)
- Previewing the process and features to ensure understanding
- Catching any potential problems related to the ACME-specific configurations

Testing should include:

- Testing the upgrade process itself
- Validating heterogeneous environment (specifically version 7.1.x and 7.0.x clients)
- Regression testing user and admin workflows, including ACME-specific documentation

Here are some key version 7.1.x upgrade issues to note during testing:

- Supported NFS and SMB requirements
- Cross version compatibility (see appendix for chart)
- ClearQuest Compatibility with ClearCase
- Migrating from RWP to CM Server

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### 2.5.1 Identify Test Infrastructure

Ensure that your testing infrastructure is similar to your production infrastructure in features even if it is smaller scale. Testing should also include performance testing on the web servers and MultiSite.

Detail your test plan and scale in this section.

### 2.6 Define Communications plan

Create a plan to notify the team of your upgrade schedule and what to expect before during and after the install of each product.

### 2.7 Create a User Training Plan

Each new version of cClearCase introduces new capabilities and features. Create a training plan to educate users on the new features. An example is where Installation Manager was introduced with version 7.1.x

You may take advantage of some of the IBM Training available at the following sites

- [IBM Rational Developerworks](#)
- [Rational IBM Education Assistant Modules](#)

### 2.8 Iterate Plan

Keep this plan up-to-date as a record of the project. The resulting plan becomes a good template for the next upgrade.

### 2.9 Schedule Version 7 Upgrade

Get the upgrade on the calendar. In general, the server upgrade should have little impact on the community. Give the teams some flexibility of when the upgrades happen so they can coordinate around critical product deliveries.

## 3 Version 7 Upgrade Audit

### 3.1 Technical Impact of ClearQuest Upgrade

This section discusses a number of specific issues that may directly impact ACME during the upgrade of ClearQuest to version 7.1x.

#### 3.1.1 Key System Requirements Issues

Issue	Notes	Additional Details
Solaris 8 is not supported by the ClearQuest client	ClearQuest Client, ClearQuest Eclipse and ClearQuest Web Server Require Solaris 9 or 10. You may have to upgrade to later versions of Solaris on your user desktops	Review System Requirements:  <a href="http://www.ibm.com/support/docview.wss?&amp;uid=swg21294762">http://www.ibm.com/support/docview.wss?&amp;uid=swg21294762</a>
Verify that you have AIX 5.3 or later for ClearQuest 7.1.x	CM Server not supported on Power 4 hardware	Review System Requirements:  <a href="http://www.ibm.com/support/docview.wss?&amp;uid=swg21294762">http://www.ibm.com/support/docview.wss?&amp;uid=swg21294762</a>
ACME may require new hardware to meet the minimum requirements for the CM server running CC and ClearQuest Web	Quad Core/CPU  8GB RAM 80GB hard disk space	Review System Requirements:  <a href="http://www.ibm.com/support/docview.wss?&amp;uid=swg21294762">http://www.ibm.com/support/docview.wss?&amp;uid=swg21294762</a>

#### 3.1.2 Web server Migration

"If you use Rational ClearQuest Web in your environment, there are specific files that you must preserve if you want to carry those settings forward. CM Server replaces RWP in Version 7.1.x."

Review the following link for more details on migrating [RWP to CM Server](#).

#### 3.1.3 ClearQuest MultiSite Upgrade

Rational ClearQuest version 7.0 and later provides an option to increase the number of record IDs from 16 million records to 100 million stateful and 2 billion stateless records. However, making this change modifies the format of the packets and ologs that are used to replicate changes in a Rational ClearQuest MultiSite environment.

If you are going to increase the record ID limit as part of your upgrade process, you must ship and import all synchronization packets before upgrading synchronization servers to Version 7.1. After upgrading to Version 7.1, the MultiSite synchronization servers cannot import the existing packets in the old format.

To ship and import synchronization packets:

1. Shut down all export operations on synchronization servers.
2. Ship all outstanding synchronization packets.
3. Import all outstanding synchronization packets.
4. Shut down all Rational Shipping Servers.

Additional Information: Record Limits and Multisite Migration

### 3.1.4 Feature Level Upgrade

- 7.1.x will give you the ability to upgrade the Feature level in Phases
- Upgrading in phases only supports unidirectional replication in your MultiSite environment. If you can accept unidirectional replication (that is, some sites cannot receive updates from other sites), you can upgrade MultiSite synchronization servers and shipping servers in phases.

IBM Rational ClearQuest Version 7.1.x gives you the choice of creating schema repositories and user databases with feature level 5, 6, or 7. You can also raise existing schema repositories and user databases from feature level 5 to 6, or from 6 to 7.

The following table lists the supported feature levels and metaschema versions for every release of Rational ClearQuest.

Table 1. Supported feature levels and metaschema versions

Version	Metaschema version	Feature level
2003/7.0.0.0	22	5
7.0.1.0	22	5 and 6
7.1.x	22	5, 6 and 7

Only clients upgraded to Version 7.1.x can access user databases that are at feature level 7 and below. Clients at 7.0.1 can only access user databases at feature level 6 and below, and clients at 7.0.0 and below 2003.06.xx can only access user databases at feature level 5. These product versions and feature level compatibility requirements also apply to the other Rational ClearQuest components such as the Designer and Maintenance Tool. These factors should be kept in strong consideration when determining whether to upgrade in phases, or all at once.

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Follow this link for additional details on [Upgrading Feature Levels in Phases](#).

### 3.1.5 Installing the New ClearQuest Report Server

ClearQuest version 7.1 introduces the following reporting feature changes when using the Rational ClearQuest Web client, Rational ClearQuest Client, and Rational ClearQuest Client for Eclipse:

- An updated model for running traditional data-push reports created with Crystal Reports. ClearQuest version 7.1 introduces the ClearQuest Report Server for Crystal Reports, a new Web application that supports running Crystal Reports data-push reports on the ClearQuest server.
- A flexible new reporting model for creating data-pull reports, which includes the following software components:
  - The Business Intelligence and Reporting Tools (BIRT) Report Designer, which is integrated with the Rational ClearQuest Client
  - The ClearQuest Reporting Driver, which supports designing data-pull reports
  - The Report Server for ClearQuest, a new Web application that supports running, managing, and sharing of data-pull reports created by using the ClearQuest Reporting Driver and the BIRT or Crystal Reports reporting systems

On the Rational ClearQuest for Windows client, ClearQuest version 7.1 continues to support the traditional data-push model of creating and running reports by using the Crystal Reports Designer and runtime, respectively.

Consider the following when planning your deployment:

- Do you have an existing ClearQuest deployment that uses Business Objects Crystal Reports to design and run traditional data-push reports?
- Do you want to move to the new data-pull reporting model while continuing to support existing Crystal Reports data-push reports?
- Do you want to migrate your existing Crystal Reports data-push reports to data-pull reports?
- Do you want to create new data-pull reports by using one or both of the following reporting systems:
  - The Business Intelligence and Reporting Tools (BIRT) reporting system, which is included with the Rational ClearQuest Client
  - The Crystal Reports reporting system, which you can purchase from [Business Objects](#)



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## Report Server use with Rational ClearQuest MultiSite

ClearQuest MultiSite replication of the database repository for the Report Server for ClearQuest is not supported. Consequently, reports generated with the Report Server for ClearQuest reflect data obtained from the local replica only. For more information, see [Deployment configuration for Rational ClearQuest MultiSite installations](#).

## Report Server use with Crystal Reports

If you plan to work with Crystal Reports from the Report Server for ClearQuest, you must install the Report Server for Crystal Reports and the Report Server for ClearQuest on the same machine to run data-pull reports.

Follow this link for additional details on [Installing the Clearquest Report Server](#).

### 3.1.6 Unix umask 0022 requirement prior to install of ClearQuest

If you are on Linux or the UNIX system and you want to enable the product to be used by users other than root, then you must set the umask variable to 0022 before you install the product.

- The Install script will have to be modified to account for this requirement

Additional notes on umask.

The default umask 0002 used for normal user. With this mask default directory permissions are 775 and default file permissions are 664.

The default umask for the root user is 0022 result into default directory permissions are 755 and default file permissions are 644.

### 3.1.7 Modify the License Key server and Client to Change Search order

If you have a license for a previous release of Rational Suite, that license is valid in the current release, but the search order for the license key has changed.

In earlier releases, when a product from Rational Suite was installed, the Rational License Key Administrator (LKAD) application tried to find a license key that corresponded to Rational Suite. If such a key was not available, LKAD searched for a key that corresponded to the product itself.

In version 7.1, LKAD looks for the product-specific license key first. You can still use the License Usage Mapper in LKAD to change this search order or have the application not search for a Rational Suite key.

This is important because ACME has bundled licenses such as TUP or Analyst Studio. We will have to make sure that the license usage mapper is setup to find the right keys quickly to avoid license key client timeouts.

- This change can be made in the manage license wizard for IBM installation manager
- To change the order for Web clients, use the License usage order page of the Manage Licenses wizard on the Web servers.

For more information on changing the search order for license keys, see [Changing license usage order](#).

### 3.1.8 Review the complete list of Key Issues when upgrading ClearQuest

Review the ClearQuest 7.1.x upgrade workflow table in the IBM Rational ClearCase Information Center. It details key issues you should plan for during an upgrade. Follow this link below to this information:

1. [7.1.x upgrade workflow](#)
2. [ClearQuest 7.1.x upgrade Installation checklist](#)

## 3.2 Technical Impact of ClearCase Upgrade

This section discusses a number of specific issues that may directly impact ACME during the upgrade of ClearCase to version 7.1.x.

### 3.2.1 Key System Requirements Issues

Issue	Notes	Additional Details
<a href="#">zSeries</a> server support for ClearCase, ClearCase MultiSite, CCRC 7.1.x RCP	Note that 32 bit is not supported on zSeries - 64 bit zLinux support only  Updates 3 and 4 supported in <a href="#">7.1.</a>	Review System Requirements:  <a href="https://www.ibm.com/support/docview.wss?uid=swg21302974">https://www.ibm.com/support/docview.wss?uid=swg21302974</a>
Verify that you have AIX 5.3 or later for ClearCase servers in 7.1.x	CM Server not supported on Power 4 hardware	Review System Requirements:  <a href="https://www.ibm.com/support/docview.wss?uid=swg21302974">https://www.ibm.com/support/docview.wss?uid=swg21302974</a>
Solaris Support	ClearCase Remote Client (CCRC) not supported on Solaris 8	Review System Requirements:  <a href="https://www.ibm.com/support/docview.wss?uid=swg21302974">https://www.ibm.com/support/docview.wss?uid=swg21302974</a>
ACME may require new hardware to meet the minimum requirements for the CM server running ClearCase and ClearQuest Web	Quad Core/CPU  8GB RAM 80GB hard disk space	Review System Requirements:  <a href="https://www.ibm.com/support/docview.wss?uid=swg21302974">https://www.ibm.com/support/docview.wss?uid=swg21302974</a>
Review supported file systems for the various OS platforms	Review, NFS, OS patches and Layered Software requirements for ClearCase.  ClearCase has layered software requirements for Solaris SPARC servers.	<a href="http://www.ibm.com/support/docview.wss?&amp;uid=swg27014067">http://www.ibm.com/support/docview.wss?&amp;uid=swg27014067</a>

### 3.2.2 Planning for the Rational ClearCase Remote Client Upgrade

To use ClearCase remote client you will need to install CM server for ClearCase. When you upgrade Rational ClearCase Remote Client (CCRC) to version 7.1.x, you must upgrade all clients and servers to the new version. Clients that run earlier versions are not compatible with version 7.1.x servers and servers that run earlier versions do not support clients that run version 7.1.x.

CCRC 7.1.x remote client can run on the same machine as other Rational products at 7.0.1.x, so this can be upgraded in phases.

When you upgrade Rational ClearCase Remote Client (CCRC) to version 7.1.x, you must upgrade all clients and servers to the new version. Clients that run earlier versions are not compatible with version 7.1.x servers and servers that run earlier versions do not support clients that run version 7.1.x.

The following table lists the client/server combinations that are currently supported. Keep in mind that the Web server and CM Server are acting in a client/view server role relative to the rest of the Rational ClearCase infrastructure. The Web server/CM Server does not need to be upgraded at the same time as the license, registry, VOB, or other view servers.

Table 1. Rational ClearCase Remote Client Client/Server compatibility

<b>Rational ClearCase Remote Client</b>	<b>Server</b>	<b>Other servers (VOB, license, view, and so on)</b>
6.14.x	ClearCase Web server 2003.06.14 or later, not including 7.0.0 and later	2003.06.00 or later 7.0.x
7.0.0	ClearCase Web server 7.0.0	7.0.x
7.0.1	ClearCase Web server 7.0.1	7.0.x
7.1.x	CM Server for Rational ClearCase Remote Client version 7.1.x or later	7.0.x or later

Note: Rational ClearCase Remote Client plug-in for Eclipse versions 3.0 and 3.1 is compatible only with Rational ClearCase versions 2003.06.15 and 7.0.

Table 2. Rational CCRC Client with Rational ClearCase Remote Client server or CM Server

<b>Rational ClearCase Remote Client</b>	<b>Server Version</b>	<b>Supported Configuration</b>
7.0.1	Rational ClearCase Remote Client server version 7.0.1	Yes
7.0.1	CM Server version 7.1.x	No
7.1.x	Rational ClearCase Remote Client server version 7.0.1	No
7.1.x	CM Server version 7.1.x	Yes

The client/server compatibility rules are enforced when a user attempts to connect (log in) to the server. In versions previous to 7.1.x, client/server incompatibility is indicated by one of the following error messages returned by the server and displayed in the message area of the login window:

- *Client is too old for this server. Please upgrade client software.*
- *Client is too new for this server. Please revert client software.*

In version 7.1.x, client/server incompatibility is indicated with a connection error message: *Unable to connect to server at "http://[server]/TeamWeb/services/Team".*

### 3.2.3 Verifying permissions when running protectvob

The command `protectvob` does not work on the `.hostname` file. If you used the command for changes, you must manually change the `.hostname` file.

### 3.2.4 ClearCase Multisite Upgrade

Upgrade the Rational ClearCase registry server host before any Rational ClearCase MultiSite replica server hosts.

You must install Rational ClearCase on your Rational ClearCase registry server host before you install it on any other Rational ClearCase host, particularly Rational ClearCase MultiSite VOB replica servers.

In a mixed network of hosts running Rational ClearCase MultiSite version 7.1.x and earlier releases, you can replicate a VOB from a host running Rational ClearCase MultiSite version 7.1.x to a host that runs an earlier major version of Rational ClearCase MultiSite only if:

- The feature level of the VOB is less than or equal to the highest VOB feature level supported by that host.
- The schema version of the VOB is supported by all replica hosts. Rational ClearCase MultiSite supports only VOB schema version 54.

#### **Preserving customer-modified shipping configuration files in Rational ClearCase MultiSite**

If you are upgrading from an earlier release of Rational ClearCase MultiSite and have modified the shipping server configuration file (`shipping.conf`) or the request for mastership shipping configuration file (`rfm_shipping.conf`), the installation detects the changes. The installation inserts a note in the installation log that instructs you to compare the newly installed configuration template file with the current configuration file and update the current configuration file as necessary.

If the installation completed successfully, the installation log is located in `/var/adm/rational/clearcase/log/Rational_install_time-stamp`. If the installation was terminated abnormally, the installation log is located in `/tmp`.

---

The template and current configuration files are installed in these locations:

#### Shipping server files

For the shipping server, the template file is *ccase-home-dir/config/services/shipping.conf.template* and the current configuration file is */var/adm/rational/clearcase/config/shipping.conf*.

#### Request for mastership server files

For the request for mastership server, the template file is *ccase-home-dir/config/services/rfm\_shipping.template* and the current configuration file is */var/adm/rational/clearcase/config/rfm\_shipping.conf*.

### 3.2.5 Known ClearCase 7.1.x Installation issues when upgrading

Upgrade issues specific to the Windows platform.

Read [technote 1326078: Rational ClearCase 7.1 installation issues](#) before you:

- Install or upgrade other IBM Rational software products in addition to Rational ClearCase
- Install Rational ClearCase on a computer that hosts other IBM Rational software products

The technote provides information that you might need to consider before you install or upgrade Rational ClearCase.

- When planning an upgrade, make a backup of the data in the *C:\Program Files\Rational\ClearCase\var\rgy* directory of the registry server.
- During the uninstallation process, you will be asked if you want to delete the Start menu folders. Click Yes.
- Before upgrading your license server, copy your license key string to a text file. When you install your new license server, copy the license key string from the text file.
- When upgrading your registry server, you must set your registry password. For more information see [Setting and using the Rational ClearCase registry password](#).

These known issues are listed in Appendix B.

### 3.2.6 Increase File Handles on Linux

The default setting on most Linux computers can be too low for obtaining best results with Rational products.

This is a recommendation, not a requirement. Follow this [link](#) for specific steps.

CAUTION: Setting limits too high can affect system-wide performance.

### 3.2.7 Unix umask 0022 requirement prior to install of ClearCase on Unix and Linux

If you are on Linux or the UNIX system and you want to enable the product to be used by users other than root, then you must set the umask variable to 0022 before you install the product.

- The Install script will have to be modified to account for this requirement

Additional notes on umask:

The default umask 0002 used for normal user. With this mask default directory permissions are 775 and default file permissions are 664.

The default umask for the root user is 0022 result into default directory permissions are 755 and default file permissions are 644.

### 3.2.8 Environment variables required by Rational ClearCase Server and Rational ClearCase Web

If you have installed the IBM Rational ClearCase Server or the IBM Rational ClearCase Web Application component, you must set several environment variables before running any of the processes available from these components.

If you have installed the Rational ClearCase Server or Rational ClearCase Web Application component, you must do the following:

- Set the LD\_LIBRARY\_PATH environment variable to include the Rational ClearCase Linux shared library
- Set the local time zone (TZ variable)

## 4 APPENDIX A

### 4.1 ClearCase Cross-Version Compatibility

Important: Version 2003.06.xx is no longer supported. Any issues found in version 2003.06.xx must be reproduced with a supported version of Rational ClearCase as 2003.06.xx issues will not be worked on by Rational Support or Rational Development. For information about Rational product lifecycle dates see: <http://www-01.ibm.com/software/rational/support/lifecycle/>. Later releases of Rational ClearCase and IBM Rational ClearQuest® are compatible with earlier releases. Backward compatibility testing is only done with currently supported releases.

Table 1. Compatibility for 2003.06.xx

Client	View Server	VOB Server	Supported Configuration for View Interaction?
2003.06.xx	2003.06.xx	2003.06.xx	Yes
2003.06.xx	7.0.x	2003.06.xx	No
2003.06.xx	7.1.x	2003.06.xx	No
2003.06.xx	2003.06.xx	7.0.x	Yes
2003.06.xx	7.0.x	7.0.x	Yes
2003.06.xx	7.1.x	7.0.x	Yes
2003.06.xx	2003.06.xx	7.1.x	Yes
2003.06.xx	7.0.x	7.1.x	Yes
2003.06.xx	7.1.x	7.1.x	Yes

Table 2. Compatibility for 7.0.x

Client	View Server	VOB Server	Supported Configuration for View Interaction?
7.0.x	2003.06.xx	2003.06.xx	No
7.0.x	7.0.x	2003.06.xx	No
7.0.x	7.1.x	2003.06.xx	No
7.0.x	2003.06.xx	7.0.x	No
7.0.x	7.0.x	7.0.x	Yes
7.0.x	7.1.x	7.0.x	Yes
7.0.x	2003.06.xx	7.1.x	No
7.0.x	7.0.x	7.1.x	Yes
7.0.x	7.1.x	7.1.x	Yes



Table 3. Compatibility for 7.1

Client	View Server	VOB Server	Supported Configuration for View Interaction?
7.1.x	2003.06.xx	2003.06.xx	No
7.1.x	7.0.x	2003.06.xx	No
7.1.x	7.1.x	2003.06.xx	No
7.1.x	2003.06.xx	7.0.x	No
7.1.x	7.0.x	7.0.x	Yes
7.1.x	7.1.x	7.0.x	Yes
7.1.x	2003.06.xx	7.1.x	No
7.1.x	7.0.x	7.1.x	Yes
7.1.x	7.1.x	7.1.x	Yes

In general, earlier versions of clients can access servers that are running the same or later versions, but current clients can access only servers that are running the same version.

Refer to the following technote for further information about ClearCase compatibility: <https://www.ibm.com/support/docview.wss?uid=swg21373318>

## 4.2 ClearQuest Cross-version Compatibility

Schema repositories and databases created with Rational ClearQuest version 7.0 and later can be accessed only by version 2003.06.13 clients or later. All clients that access a database running on Oracle must be upgraded to version 2003.06.13 or later. Version 2003.06.15 or later, and version 7.0 and later, are recommended.

## 4.3 Deciding on the feature level

IBM Rational ClearQuest Version 7.1.x gives you the choice of creating schema repositories and user databases with feature level 5, 6, or 7. You can also raise existing schema repositories and user databases from feature level 5 to 6, or from 6 to 7.

The feature level and metaschema version define the structure of the data stored in Rational ClearQuest schema repositories and user databases. New feature levels and metaschema versions typically add new columns to tables and new tables to databases to support new features. For information on features available at the different feature levels, see [Features in the feature levels](#).

Feature levels are associated with specific metaschema versions. The following table lists the supported feature levels and metaschema versions for every release of Rational ClearQuest.

Table 1. Supported feature levels and metaschema versions

Version	Metaschema version	Feature level
2003/7.0.0.0	22	5
7.0.1.0	22	5 and 6
7.1.x	22	5, 6 and 7

Only clients upgraded to Version 7.1.x can access user databases that are at feature level 7 and below. Clients at 7.0.1 can only access user databases at feature level 6 and below, and clients at 7.0.0 and below 2003.06.xx can only access user databases at feature level 5. These product versions and feature level compatibility requirements also apply to the other Rational ClearQuest components such as the Designer and Maintenance Tool. These factors should be kept in strong consideration when determining whether to upgrade in phases, or all at once.

If you upgrade your user databases to a particular feature level, all clients accessing that user database must upgrade to the corresponding product version of the schema repository. For example, if the schema repository is at feature level 7 and the user database is at feature level 6, the client must be at version 7.1.x to access the user database.

One factor that simplifies raising the feature level is that upgrading the user databases can be performed with an in-place upgrade. That means you can use the Maintenance Tool to upgrade a user database to a higher feature level without having to create a new database and copy data to it.

Your Rational ClearQuest databases must be at feature level 5 and metaschema 22 or higher before you install Version 7.1.x. If your databases were created with version 2001A.04.20 or later, then these database are at level 5.

Note: For IBM Rational ProjectConsole, a client at version 7.1.x can upgrade feature level 3 databases to feature level 5, 6, or 7. But the client cannot access feature level 3 databases.

Also, before you raise the feature level of your databases, make sure that the database connections are all compatible with your version of Rational ClearQuest. For more information, see [Setting database properties and connection information](#).

#### **4.4 Upgrading everything at once**

For information about when to upgrade your feature levels when upgrading the entire environment at once, see [Upgrading the environment at one time](#).

## 4.5 Upgrading in phases

If you are upgrading your environment in phases, there are considerations to be made when upgrading your feature levels. These conditions apply whether you are upgrading to feature level 5, 6, or 7.

- All clients must be upgraded to the feature level's corresponding product version before upgrading the user database and schema repositories to that feature level. If not, the clients cannot access the user database.
- All servers and databases must be at a version supported by the feature level's corresponding release before upgrading. For more information, see [Vendor database and platform support](#).
- User databases and schema repositories do not need to be at the same level. You can upgrade an existing schema repository to feature level 6 while leaving the associated user databases on feature level 5, or you can upgrade an existing schema repository to feature level 7 while leaving the associated user databases on feature level 5 or 6. This allows you to upgrade your user databases and your Rational ClearQuest clients to higher feature levels in phases over time. However, all clients must be upgraded to the same product version that corresponds to the feature level of the user database.
- Upgrading in phases only supports unidirectional replication in your MultiSite environment. If you can accept unidirectional replication (that is, some sites cannot receive updates from other sites), you can upgrade MultiSite synchronization servers and shipping servers in phases.

Unidirectional replication means that packets sent from a user database with a lower feature level will be accepted by user databases with a higher feature level, but packets from a user database with a higher feature level will not be accepted by a user database with a lower feature level.

User databases do not need to be at the same feature level as their associated schema repositories. You can raise the feature level of schema repositories first and raise the feature level of their associated user databases later.

Schema repositories must be at compatible feature levels to support unidirectional replication. For example, if the feature level 5 user database has a feature level 7 schema repository, the packets sent from it will not be accepted by feature level 6 user database that has a feature level 6 schema repository.

The following table shows the packet versions that a site can create and can accept. Rational ClearQuest Version 7.1.x supports packet versions 6 to 11.

Table 2.

Schema Repository feature level	User database feature level	Created Packet Version	Accepted Packet Version
7	7	11	6, 7, 8, 9, 10, 11
7	6	10	6, 7, 8, 9, 10
7	5	9	6, 7, 8, 9
6	6	8	6, 7, 8
6	5	7	6, 7
5	5	6	6

## 5 Appendix B

### Knowledge Collection: Rational ClearCase 7.1 installation issues

**Note:** The following information was taken from technote 1326078 (<http://www.ibm.com/support/docview.wss?&uid=swg21326078>)

#### Question

Are there documents describing issues that are related to upgrading to IBM® Rational® ClearCase 7.1?

#### Answer

This technote is intended to supplement the individual product release notes, placing emphasis on important issues that you must be aware of prior to installation. Rows are added at the bottom of the tables.

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All Platforms: Issues affecting all platforms

Windows: Issues affecting Windows platforms

Linux: Issues affecting Linux platforms

Solaris: Issues affecting Solaris platforms

HP-UX: Issues affecting HP-UX platforms

AIX: Issues affecting AIX platforms

**General Information:** Installation Information

#### All Platforms

Unable to find a valid license if redundant license servers are specified without a port number during installation

[1326944](#)

Languages shown on the language selection screen during an installation may not apply to all of a product's components

[1327478](#)

Manage Licenses is empty or does not list Rational Team Product in Installation Manager

[1328034](#)

ClearCase MultiSite Global Monitor - IBM Tivoli Monitoring Install Location can not exceed 80 characters or contain spaces, non-ascii or double-byte characters

[1327823](#)

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CM Server is not installed after a failed update

[1377432](#)

ERROR: Updating ClearCase 7.1.0.01 is not allowed, when applying a FixPack to ClearQuest 7.1

[1381702](#)

## Windows

Installation Manager fails to remove files after an uninstallation

[1328226](#)

Installation of ClearCase or ClearQuest with .NET Integration fails when regedit.exe is not in the PATH environment variable

[1327946](#)

Modifying ClearCase to remove CM Server or uninstalling ClearQuest, RequisitePro, or ProjectConsole fails when Global Monitoring is installed

[1327882](#)

Uninstallation of ClearCase fails when Global Monitoring is installed

[1327676](#)

Unable to uninstall or modify a Team Product when files are active

[1326602](#)

Error: The installation directory "C:\Program Files\IBM\RationalSDLC" exists and contains files.

[1326166](#)

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[1321678](#)

Fields Hostname or IP and Port Number refer to IBM Tivoli Monitoring on the Global Monitoring installation panel

[1327804](#)

Launchpad exits with an error when run from a UNC path on a Windows 2008 server

[1327716](#)

Server Storage wizard does not automatically launch following the installation of ClearCase

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[1323013](#)

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[1327393](#)

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[1326940](#)

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[1327475](#)

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Error: The local host is configured to use itself as its ClearCase registry server but is NOT configured as a CC registry server.  
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Replace updateSettings during installation of ClearCase on Linux\_ppc and CCRC on Windows  
[1375820](#)

Rolling back a ClearCase update fails on Windows 2000 when MVFS is installed  
[1377600](#)

ClearCase Remote Client VOBs and views not preserved and restored during an upgrade, rollback or uninstall  
[1386254](#)

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[1366385](#)

Rolling back a ClearCase update fails on Windows 2000 when MVFS is installed  
[1377600](#)

Driver signing issues causes the ClearCase installation to stop  
[1389265](#)

Global Monitoring files and directories not removed after uninstallation of ClearCase  
[1389935](#)

Stop processes and services for Rational products before updating  
[1385993](#)

Installation of ClearCase fails on machine that is also the domain controller when using the local system as the service account's domain  
[1392255](#)

## Linux

During installation, the Global Monitoring panel does not contain a default port number  
[1327271](#)

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[1327392](#)

Installing with UMASK set to 77 allows only root to use the product.  
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[1326678](#)

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[1327171](#)

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## General Information

Sample response files for IBM Rational ClearCase

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Sample response files for IBM Rational ClearCase Remote Client

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Sample uninstall response files for IBM Rational ClearCase

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How to modify an IBM Rational ClearCase or IBM Rational ClearQuest installation using Installation Manager in silent mode

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Enable debugging for ClearCase and ClearQuest installs using Installation Manager

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## 6 Appendix C – References

### Product Documentation

#### 6.1 *ClearCase Information Center*

<https://publib.boulder.ibm.com/infocenter/cchelp/v7r1m0/index.jsp>

#### 6.2 *ClearQuest Information Center*

<https://publib.boulder.ibm.com/infocenter/cqhelp/v7r1m0/index.jsp>

#### 6.3 *Deployment Planning for IBM Rational ClearQuest Version 7.1*

<http://www.ibm.com/developerworks/rational/library/09/rationalclearquestdeploymentplan/index.html>