

# Installing Rational ClearQuest

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### **PATENT**

U.S. Patent Nos. 5,193,180 and 5,335,344 and 5,535,329 and 5,835,701. Additional patents pending.

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# 1

## Installing ClearQuest

This chapter describes how to install ClearQuest. You, the ClearQuest administrator, set up the databases to use with ClearQuest, install ClearQuest, and provide the required setup information to each client user. You (or your client users) can then install ClearQuest on the client machines.

**Warning:** If you are using multiple products from Rational Suite, all products must be from the same Suite version (installed from the same CD-ROM). If you want to upgrade a product from the Suite, un-install all Rational Suite products and install the desired products from the newer Suite CD-ROM. Refer to your Rational Suite Installation documentation.

It's important that you review all the necessary steps before beginning.

This chapter covers the following topics:

- “Before you begin” on page 2.
- “Understanding the ClearQuest install process” on page 3.
- “Understanding the ClearQuest MultiSite master site install process” on page 5.
- “Understanding the ClearQuest MultiSite replica site install process” on page 6.

## Before you begin

Before you install ClearQuest, read the following:

- *Rational ClearQuest Release Notes*: An HTML file that contains the most current system requirements information (including platform version support).
  - **For Windows:** <d>:\ClearQuest\clearquest\_readme.htm (where <d> is your CD-ROM drive)
  - **For UNIX:**  
<d>:/products/ClearQuestClient/clearquest\_readme.htm (where <d> is your CD-ROM drive)
- *Introducing Rational ClearQuest*: An overview of ClearQuest components and how to use them.
- *Administering Rational ClearQuest*: A guide on how to customize ClearQuest to meet your needs.
- *Administering Rational ClearQuest MultiSite*: A guide on how to create and administer ClearQuest MultiSite database replicas.

## Understanding the ClearQuest install process

The following is an overview of the installation process.

- 1 Set up your database product. As the ClearQuest administrator, you are responsible for setting up the databases your users will use with ClearQuest. See “Configuring vendor databases” on page 9.
- 2 Optionally, install Seagate’s Crystal Reports Professional Edition™. If you or any of your ClearQuest users will be authoring ClearQuest report formats, you will need to install Crystal Reports. If you currently have Crystal Reports 6.0 installed, you will need to un-install it and install Crystal Reports 8.0 **before** installing Rational ClearQuest. The Crystal Reports Installation CD is included with your ClearQuest Media Kit. For more information on report creating and authoring, refer to *Introducing Rational ClearQuest* and the ClearQuest on-line help systems.
- 3 Set up your license server. See “Licensing Rational Software” on page 46. If you are installing ClearQuest MultiSite, you will need to setup a license server for both ClearQuest and ClearQuest MultiSite.
- 4 Install ClearQuest on the administrator’s machine and create the ClearQuest databases. See “Installing and configuring ClearQuest for an administrator” on page 39.

An administrative installation of ClearQuest involves the following steps:

- “Installing ClearQuest” on page 40
  - “Creating ClearQuest databases” on page 41
- 5 If you are installing ClearQuest MultiSite and you want to use the Rational Shipping Server, you will have to install it from the ClearCase installation CD if you have ClearCase installed on your system. See “Installing the Rational Shipping Server” on page 54.
  - 6 If this installation is an upgrade from a previous release of ClearQuest, you will have to upgrade your existing databases to

enable access to the new features. If this is the case, see “Upgrading ClearQuest” on page 135.

- 7** Optionally, customize your installation. See the *Administering Rational ClearQuest* guide for details on customizing ClearQuest.
- 8** If you are installing ClearQuest MultiSite, you will also have to install ClearQuest at the replica sites and create the ClearQuest database set replicas.
- 9** Install ClearQuest on the client machines and provide users with the information they need to connect to ClearQuest. See “Installing and configuring ClearQuest Windows for end-users” on page 63 and “Installing and configuring ClearQuest UNIX for end-users” on page 69.
- 10** If you are installing ClearQuest Web, see “Installing and Configuring ClearQuest Web” on page 93.

## Understanding the ClearQuest MultiSite master site install process

You install the ClearQuest MultiSite master or working repository site by performing the following steps:

- 1 Set up your database product. As the ClearQuest administrator, you are responsible for setting up the databases your users will use with ClearQuest. See “Configuring vendor databases” on page 9.
- 2 Set up your license server. See “Licensing Rational Software” on page 46.
- 3 Install ClearQuest MultiSite and optionally, the Rational Shipping Server.  
**Note:** Install the Rational Shipping Server on the host server which will be used to send, receive, and store ClearQuest MultiSite packets. Only one machine should be designated at the MultiSite “host” machine.  
**IMPORTANT:** If installing ClearQuest MultiSite on a machine which is also running Rational ClearCase or Rational ClearCase MultiSite, see “Installing the Rational Shipping Server” on page 54.
- 4 Configure the MultiSite Control Panel on the host machine. See *Administering Rational ClearQuest MultiSite* for detailed instructions.
- 5 Customize your schema to use MultiSite mastership features and upgrade your user database(s). See “Setting up mastership for records” on page 61.
- 6 Create replicas of your user databases and send export packets to respective sites. See Chapter 3, “Creating Replicas” in manual, *Administering ClearQuest MultiSite*.
- 7 Install ClearQuest on the client machines and provide local users with the information they need to connect to ClearQuest. See “Installing and configuring ClearQuest Windows for end-users” on page 63 and “Installing and configuring ClearQuest UNIX for end-users” on page 69.

- 8 If you are installing ClearQuest Web, see “Installing and Configuring ClearQuest Web” on page 93.

## Understanding the ClearQuest MultiSite replica site install process

Install ClearQuest MultiSite replica site by performing the following steps:

- 1 Set up your database product. As the ClearQuest administrator, you are responsible for setting up the databases your users will use with ClearQuest. See “Configuring vendor databases” on page 9.
- 2 Set up your license server. See “Licensing Rational Software” on page 46 and “ClearQuest MultiSite Licensing” on page 47.
- 3 Install ClearQuest MultiSite and optionally, the Rational Shipping Server.

**Note:** Install the Rational Shipping Server on the host machine which will be used to send, receive, and store ClearQuest MultiSite packets. Only one machine should be designated at the MultiSite “host” machine.

**IMPORTANT:** If installing ClearQuest MultiSite on a machine which is also running Rational ClearCase or Rational ClearCase MultiSite, see “Installing the Rational Shipping Server” on page 54.

- 4 **DO NOT** create ClearQuest databases.

**Warning:** Do NOT create a ClearQuest database before receiving a database replica. A ClearQuest database is automatically created when you import a replica packet into an empty vendor database. If you have created a ClearQuest database with the Maintenance Tool or ClearQuest Designer, the replica import will fail and you will need to delete the vendor databases and create them again.

- 5 Configure the MultiSite Control Panel on the host machine. See *Administering Rational ClearQuest MultiSite* for detailed instructions.

- 6** After receiving replica-creation packets from the working master site, import replica-creation packets into empty vendor databases, see Chapter 5 “Creating Replicas” in the *Administering Rational ClearQuest MultiSite* manual for more information.
- 7** Install ClearQuest on the client machines and provide users with the information they need to connect to ClearQuest. See “Installing and configuring ClearQuest Windows for end-users” on page 63 and “Installing and configuring ClearQuest UNIX for end-users” on page 69.
- 8** If you are installing ClearQuest Web, see “Installing and Configuring ClearQuest Web” on page 93.



# 2

## Configuring vendor databases

Before you install Rational ClearQuest, you need to create and configure the vendor databases that you will use with ClearQuest and ClearQuest MultiSite.

ClearQuest and ClearQuest MultiSite require at least two databases:

- A schema repository: This is the master database where ClearQuest and ClearQuest MultiSite stores schemas.
- A user database: This is where data entered by ClearQuest client and web users is stored. You can have as many user databases as you need.

This chapter covers the following topics:

- “Choosing a database vendor” on page 10
- “Setting up Microsoft Access” on page 12
- “Setting up SQL Anywhere” on page 13
- “Setting up Microsoft SQL Server 6.5” on page 17
- “Setting up Microsoft SQL Server 7 and 2000” on page 22
- “Setting up the Oracle Server” on page 28
- “Setting up IBM DB2” on page 35

## Choosing a database vendor

**Warning:** If you are installing ClearQuest MultiSite, do not create additional databases at the replica site. For more information see “Installing and Configuring ClearQuest MultiSite” on page 49.

ClearQuest Windows supports the following databases:

- Microsoft Access (supplied with ClearQuest)
- Sybase SQL Anywhere (supplied with ClearQuest)
- Microsoft SQL Server
- Oracle (NT)
- IBM DB2.

ClearQuest UNIX supports the following databases:

- Microsoft SQL Server
- Oracle (UNIX)
- IBM DB2.

ClearQuest MultiSite supports the following databases:

- Microsoft SQL Server
- Oracle (NT)
- IBM DB2

For specific supported versions, see *ClearQuest Release Notes*:

- For Windows: <d>:\ClearQuest\clearquest\_readme.htm  
(where <d> is your CD-ROM drive).
- For UNIX: <d>:/products/  
ClearQuestClient/ClearquestReleaseNotes.htm  
(where <d> is your CD-ROM drive).

**Note:** You can use more than one database vendor for ClearQuest databases. For example, you might want to use Oracle or Microsoft SQL Server databases for your schema repository and user databases, then use a Microsoft Access database for your test database. However, we do not recommend using multiple database

vendors when you are using ClearQuest MultiSite due to case sensitivity rules that are not consistent between vendors.

### Database case sensitivity

There are two scenarios when it is mandatory that your database sensitivity setting are consistent:

- When you are moving a database from one database vendor type to another.
- When you are using ClearQuest Multisite and are employing multiple synchronized databases created from different database vendor products.

Review the following case sensitivity properties before determining which database vendor product to use.

Database Vendor	Default Setting	Possible Settings	Comments
MS ACCESS	Case-insensitive	Case-insensitive	MS Access databases are case-insensitive.
SQL ANYWHERE	Case-insensitive	Case-insensitive, Case-sensitive	All databases are created as case-insensitive, this setting can be changed to make it case sensitive.
DB2	Case-sensitive	Case-sensitive	The case sensitivity is applicable to data only and not database object names.
SQL SERVER	Case-insensitive, Case-sensitive	Case-insensitive, Case-sensitive	The case sensitivity can be decided either by using the installation time option or database creation time option. <b>Note:</b> Case sensitivity applies to database object names as well as data
Oracle	Case-sensitive	Case-sensitive	The case sensitivity is applicable to data only and not database object names.

## Setting up Microsoft Access

**Note:** ClearQuest Web and ClearQuest MultiSite do not support Microsoft Access databases.

If you are using ClearQuest with Microsoft Access,

- 1 Create one shared directory on the machine for the directory that will contain your Microsoft Access databases.
- 2 Make a note of the UNC path of the share directory. The path should be of the form:

```
\\<machine_name>\<share_name>\<database_directory>\
```

For example:

```
\\developmentserver\project34share\clearquestdbs\
```

The first time you run ClearQuest, you are asked to create a schema repository. You will specify this pathname and provide a filename for the schema repository. ClearQuest then creates and initializes the appropriate Access databases in this directory.

Now that you have set up the Access databases, proceed to “Installing and configuring ClearQuest for an administrator” on page 39.

## Setting up SQL Anywhere

To create a SQL Anywhere database server, complete the following tasks:

- Install the Sybase SQL Anywhere Server software. (**Note:** SQL Anywhere is available on the ClearQuest CD and can be installed using the Rational Software Setup wizard).
- Choose or create a user account to run the SQL Anywhere database server and set user privileges for that account. See Defining user privileges below.
- Create a SQL Anywhere database server. See “Creating a SQL Anywhere database server” on page 14.

**Note:** SQL Anywhere database are created as case-insensitive databases. If you are you want to migrate to a different database vendor, you need to evaluate your database case sensitivity settings. See “Database case sensitivity” on page 11 for more information.

### Defining user privileges

To define privileges for a user account running a SQL Anywhere database server:

- 1 Make sure you have installed the Sybase SQL Anywhere Server software.
- 2 Do one of the following:
  - If your Windows NT computer is running Windows NT Workstation software, click Start > Programs > Administrative Tools (Common) > User Manager.
  - If your Windows NT computer is running Windows NT Server software:
    - Click Start > Programs > Administrative Tools (Common) > User Manager for Domains.
    - Click User > Select Domain and type the local machine name in the Domain box, and then click OK.

**Note:** If the user does not already exist, create the user (User > New User).

- 3 Click Policies > User Rights to open the User Rights Policy dialog box.
- 4 Select Show Advanced User Rights.
- 5 In the Right list box of the User Rights Policy dialog box, select Access this computer from network.
- 6 Click Add.
- 7 For List Names From, select the domain of the account running the SQL Anywhere database server.
- 8 Click Show Users.
- 9 In the Names list, select the account running the SQL Anywhere database server.
- 10 Click Add, and then click OK.
- 11 In the Right list box of the User Rights Policy dialog box, select Log on as a service.
- 12 Repeat Steps 6 through 10.
- 13 In the Right list box of the User Rights Policy dialog box, select Log on locally
- 14 Repeat Steps 6 through 10.
- 15 Click OK.
- 16 Click User > Exit.

### **Creating a SQL Anywhere database server**

A SQL Anywhere database server is a process that runs on the database server machine. Its function is to coordinate all activity against your SQL Anywhere databases. You create one SQL Anywhere server to provide access to all of your database files.

Follow these steps to use the Rational Administrator to create a new server:

- 1 From the Start menu, click Sybase SQL Anywhere Database Server > Rational Administrator.
- 2 Click File > New SQL Anywhere Database Server.
- 3 Type a unique alphanumeric string of up to 30 characters that identifies this database server on the network, and then click Next.  
**Important:** Do not use spaces or special characters in the server name (underscores are acceptable).
- 4 Type the amount of space to use for caching data for the SQL Anywhere database server, and then click Next. Allow 2048 KB for each Rational repository on the server.
- 5 Select one or more protocols to communicate with the SQL Anywhere database server, and then click Next.  
**Note:** To reduce connection time, select only those protocols that are actually used on your network.
- 6 Select the Startup options, as described in the following steps.
  - a Select one of the following Windows NT Service Startup options. These options start the SQL Anywhere database server when you power on your system:
    - Click Automatic to automatically start the SQL Anywhere database server when you start your system.
    - Click Manual if you do not want the SQL Anywhere database server to automatically start when you start your system. If you select this option you will have to manually start the database server after each time you reboot the server machine.
  - b Select or clear Start service immediately. This option starts the SQL Anywhere database server immediately after you create it. If the box is cleared, you will need to start the server manually after creating it.
- 7 In the Account section, do the following.

- a Click **Other Account** to allow users to access a shared ClearQuest database or shared repository. This option gives users the most flexibility for accessing a database or repository.

**Note:** Do not use **System Account (LocalSystem)** to run the service under a local account. Doing so prevents you from remotely configuring a ClearQuest database using UNC.

- b Type a domain and user account name for the **Other Account**. This is the account you created and configured under “Defining user privileges” on page 13. The name is case-sensitive.

Enter the user account information as follows:

- If you created a local machine account in Step 2 on page 13, enter the domain and account name as:

`.\userid`

- If you created a domain account, enter the domain and account name as:

`domain\userid`

- c Type the password for the **Other Account**. The password is case-sensitive.

- 8 Click **Next**.

The Rational Administrator displays a summary of your choices.

- 9 Click **Finish**.

- 10 After installing the SQL Anywhere software, create one shared directory on the machine for the directory that contains your SQL Anywhere databases. (To increase performance, keep your databases on the same machine as the database server.)

- 11 Make a note of the UNC path of the shared directory. The path should be in the form:

`\\<machine_name>\<share_name>\<database_directory>`

For example:

`\\developmentserver\project34share\clearquestdbs`

Now that you have set up your SQL Anywhere databases, proceed to “Installing and configuring ClearQuest for an administrator” on page 39.

## Setting up Microsoft SQL Server 6.5

Install SQL Server 6.5 with SQL Server Service Pack 5a, if you have not already installed it.

**Note:** When you install SQL Server, select one of the following sort-order options:

- Dictionary order, case-sensitive
- Dictionary order, case-insensitive

If you change sort orders after installing SQL Server, you must rebuild the SQL databases and reload the data.

**Note:** This will affect case-sensitivity of ClearQuest queries. If you want ClearQuest queries to be case-insensitive, set the order here. See “Database case sensitivity” on page 11 for more information.

### Registering your SQL Server machine for SQL Server 6.5

Start SQL Server Enterprise Manager. If the SQL Server machine is not already registered, register it now.

- 1 Click Server > Register Server.
- 2 Type the server name.  
**Note:** Make a note of the server name because you will need it during the ClearQuest installation.
- 3 Click Use Standard Security.
- 4 For Login ID, type SA, which is the System Administrator.
- 5 For Password, type your SA password.
- 6 Click Register.

The server should now appear in the list of servers.

## 7 Set up the SQL Server databases as described in the next section.

### **Setting up SQL Server 6.5 databases**

You must set up one empty SQL Server 6.5 database for the ClearQuest schema repository, and one empty SQL Server 6.5 database for each ClearQuest Client user database (such as the optional `SAMPL` database). For each SQL Server 6.5 database, complete the following tasks:

- Create an empty database
- Create login accounts for the database
- Set up a backup procedure for the database

To add more databases to ClearQuest, repeat the preceding tasks for each new database.

**Note:** These instructions assume that you have a simple SQL Server configuration. If you have large databases or many users, consider setting up separate log devices or spreading data across multiple devices. For details, see your SQL Server documentation.

### ***Creating empty databases***

Use the SQL Server Enterprise Manager to create an empty SQL Server 6.5 database for the ClearQuest schema repository and for each ClearQuest client user database (such as the `SAMPL` database).

**Note:** Your SQL Server databases must be in the same network domain as your ClearQuest Web server and any ClearQuest clients or tools that need to connect to the database. If it is not in the same domain, you will get an error. See the ClearQuest release notes for more details. Consult the Microsoft KnowledgeBase Article Q152828,

<http://premium.microsoft.com/support/kb/articles/q152/8/28.asp>.

For each SQL Server 6.5 database, do the following.

- 1 Create the data device.
  - a Select your SQL Server machine. If your machine does not appear in the list of servers, you need to register it. See “Registering your SQL Server machine for SQL Server 6.5” on page 17.
  - b Click **Manage > Database Devices**.
  - c Click the **New Device** icon.
  - d Type a name for the device, select a location, and type a size.

For the schema repository, allocate at least 50 MB. The device must be large enough to hold all the schema versions. You can adjust this size later, if necessary.

For the user database, allocate at least 15 MB for every 1,000 records you expect to generate. The exact amount of space required depends on the complexity of your schema.
  - e Click **Create Now**.

The new device should now appear in the list of devices.
  - f Close the **Manage Database Devices** window.
- 2 Create the database.
  - a Click **Manage > Databases**.
  - b Click the **New Database** icon.
  - c Type a name for the database.
  - d For **Data Device**, select the device you just created.
  - e Leave **Log Devices** as `none`.
  - f Click **Create Now**.

The new database should now appear in the list of databases.
- 3 Configure the database:
  - a In the **Manage Database** window, double-click the database you just created. The **Edit Database** dialog box appears.
  - b Click the **Options** tab.

- c Click Select Into/Bulk Copy and Truncate Log on Checkpoint.
- d Click OK.
- e Close the Manage Databases window.

### ***Creating login accounts for each database***

Use the SQL Server 6.5 Enterprise Manager to create login accounts for ClearQuest. ClearQuest uses these accounts to log into the SQL Server database program on behalf of ClearQuest users. These login accounts are separate from ClearQuest user logins and are hidden after the installation.

**Note:** When you create the ClearQuest schema repository, the ClearQuest Maintenance tool prompts you for the three logins listed below. If you do not want to create three separate login accounts, you can use the DBO login ID for all three.

Create the following login accounts for each database using SQL Server authentication:

- A database owner (DBO) login account
- A general purpose login account
- Another general purpose login account to be used by the schema repository. This third account will be used as a read-only account by ClearQuest.

**Note:** You will need to set up SQL Server to operate in Mixed Mode (Windows NT Authentication and SQL Server Authentication). This property can be set via Enterprise Manager, right-click on the server and select Properties menu and then click the Security tab.

Follow these steps to create the login accounts:

- 1 Click Manage > Logins.
- 2 Type a unique login name and password.

**Note:** Remember the names and passwords of each login account; you will need them during the ClearQuest installation.

- 3 In the Permit column, click the database for which you are creating the login. A check mark should appear in the Permit column.
- 4 If you are creating the database owner login, click the Alias column and select DBO.
- 5 Click Add and confirm the password.
- 6 Repeat steps 2 through 5 for the other accounts.
- 7 Close the Manage Logins window.

### ***Setting up database backup procedures***

The backup procedure described here provides a daily backup for the ClearQuest databases by overwriting the backup device each day. It assumes that your site also periodically backs up the backup device to recoverable media.

Use the SQL Server Enterprise Manager to set up backup schedules for the schema repository and for the databases.

- 1 Click Tools > Database Backup/Restore.
- 2 On the Database Backup/Restore dialog box, click the Backup tab.
- 3 From the Database Backup list, select the database you want to back up.
- 4 From the Backup Devices list, select New.
- 5 Type a name and select a location. We recommend that you put the backup device on a different disk than the database devices, and that this daily backup be backed up to tape by your site's normal backup procedures.
- 6 Select Disk Backup Device.
- 7 Select Create.
- 8 Click Schedule.
- 9 In the Backup Volume Labels dialog box, leave Volume level blank.
- 10 In the Schedule Backup dialog box, select Recurring.

- 11 Click Change.
- 12 For Daily Frequency, select 12 a.m. or another time of your choice.
- 13 Click OK to close the open dialog boxes.
- 14 Click Close to close the Database Backup/Restore dialog box.

Now that you have set up your SQL Server databases, proceed to “Installing and configuring ClearQuest for an administrator” on page 39.

## Setting up Microsoft SQL Server 7 and 2000

**Note:** When you install SQL Server, select one of the following sort-order options:

- Dictionary order, case-sensitive
- Dictionary order, case-insensitive

If you change sort orders after installing SQL Server, you must rebuild the SQL databases and reload the data.

**Note:** This will affect case-sensitivity of ClearQuest queries. If you want ClearQuest queries to be case-insensitive, set the order here. See “Database case sensitivity” on page 11 for more information.

You need to set up one empty SQL Server database for the ClearQuest schema repository, and one empty SQL Server database for each ClearQuest Client user database (such as the optional `SAMPL` database). For each SQL Server database, complete the following tasks.

- (Verify) server registration
- Create an empty database
- Set up a backup procedure for the database
- Create an SQL Server login with the `db_owner` role to use for the ClearQuest database logins (the same login is used by ClearQuest for all connections).

**Note:** Do not use the SA (system administrator) login. During an upgrade or move process, ClearQuest requires empty databases. However, if the SA login is used, ClearQuest is able to see the System Tables, assumes the database is not empty, and does not allow the upgrade/move process to continue.

**Note:** When installing SQL Server 2000, it is important to select the default registration name for your database server. This will make the registration name the same as your server's machine name.

If you want to add more user databases to ClearQuest, repeat the succeeding tasks for each new database.

### Registering your SQL Server machine for SQL Server

- 1 In the SQL Server Enterprise Manager, select your Windows NT server in the SQL Server Group.

If your server is not shown, register it now by going to Step 2. If your server is already registered, go to “Creating a new SQL Server 7 database” on page 24.

- 2 Right-click on the SQL Server Group and select New SQL Server Registration. The Register SQL Server Wizard displays.
- 3 Select a server name, and click Next.

**Note:** Make a note of the server name because you will need it during the ClearQuest installation.

- 4 For Authentication Mode, select SQL Server Authentication, then click Next.
- 5 For Login ID, type SA and for Password, type your SA password. Then click Next. (The SA user has the privilege to create logins and databases.)
- 6 Add this server to an existing group, or create a new group. Then click Next.
- 7 Click Finish. The server will appear in the list of servers.

- 8 Check status of registration and click Close.

### **Creating a new SQL Server 7 database**

- 1 From the Getting Started Taskpad, select Administer SQL Server > Create a database.
- 2 In the wizard, specify a file system location for the database and the log. You can accept the defaults for the growth rate of the database and the log.

**Note:** If you want to give the databases larger initial values, allocate at least 50 MB for the schema repository and at least 15 MB for every 1,000 records expected for your user databases.

- 3 After you create a database, you are prompted to create a Database Maintenance Plan. The Database Maintenance Plan Wizard allows you to set up a database backup routine. It is strongly recommended that you set up automated nightly backups for all your ClearQuest databases.
- 4 Set database properties for the new database:
  - a Select the new database from the server's databases folder.
  - b Right-click on the database and select Properties.
  - c On the Options tab, select these Settings:
    - Select into / bulk copy
    - Truncate log on checkpoint
  - d Click OK.

### **Creating a new SQL Server 2000 database**

**Note:** When installing SQL Server 2000, it is important to select the default registration name for your database server. This will make the registration name the same as your server's machine name.

- 1 Open the SQL Server Enterprise Manager, right click the server name and select View -> Taskpad.
- 2 Click on the Wizards, go to Setup a Database, click on Create a Database Wizard.
- 3 In the wizard, specify a file system location for the database and the log. You can accept the defaults for the growth rate of the database and the log.

**Note:** If you want to give the databases larger initial values, allocate at least 50 MB for the schema repository and at least 15 MB for every 1,000 records expected for your user databases.

- 4 After you create a database, you are prompted to create a Database Maintenance Plan. The Database Maintenance Plan Wizard allows you to set up a database backup routine. It is strongly recommended that you set up automated nightly backups for all your ClearQuest databases.

### Creating SQL Server logins

Create a db\_owner login for each ClearQuest database (schema repository and each user database) by selecting the db\_owner role for each of the logins you create.

**Note:** Do not use the SA (system administrator) as the owner login of a ClearQuest database. During an upgrade or move process, ClearQuest requires empty databases. However, if the SA login is used, ClearQuest is able to see the System Tables, assumes the database is not empty, and does not allow the upgrade/move process to continue.

- 1 Expand the Security folder, then right-click Logins, and click New Login. The SQL Server Login Properties - New Login dialog box displays.
- 2 On the General tab, select SQL Server Authentication because ClearQuest does not support Windows authentication.

**Note:** Because ClearQuest requires an SQL Server login for each database and does not support Windows NT Authentication, you will need to set up SQL Server to operate in Mixed Mode

(Windows NT Authentication and SQL Server Authentication).

This property can be set via Enterprise Manager, right-click on the server and select Properties menu, Security tab.

- 3 Enter a name and password.
- 4 In the Defaults area, select your database and leave the Language set to <default>.
- 5 On the Server Roles tab, do not grant *any* server roles.
- 6 Grant db\_owner privileges to the login in the new database.
  - a On the Database Access tab, select from the Permit list the new database to grant the login permission.
  - b Under Permit in database role, check db\_owner and public. Do not grant this user any other privileges.
- 7 Click OK and verify your password.

### Migrating from SQL Server 6.5

Use the ClearQuest Maintenance Tool to migrate your schema repository to an SQL Server 7 database. Then use ClearQuest Designer to move previous SQL Server 6.5 user databases to SQL Server 7. You do this by using the Properties dialog box to change the properties of the user database.

**Warning:** When migrating from SQL Server 6.5 to SQL Server 7, do **not** use the SQL Server 7 Upgrade Wizard to upgrade your schema repository and user databases. You need to use the ClearQuest Maintenance Tool and ClearQuest Designer.

### Ensuring SQL Server 7 Client Connectivity

SQL Server 7 client machines require SQL Server ODBC driver number 3.7x. To update the ODBC driver for a client machine:

- 1 Go to that machine, insert the SQL Server 7 CD-ROM, and run  
D:\x86\other\mdac\_type.exe

where *D:* is the letter of your CD-ROM drive.

- 2** Choose the Custom install option when prompted.
- 3** Select ODBC Driver for Microsoft SQL Server (and unselect other options such as Microsoft JetEngine).

Now that you have set up your SQL Server databases, proceed to “Installing and configuring ClearQuest for an administrator” on page 39.

## Setting up the Oracle Server

If you are using ClearQuest with Oracle databases, install and create the databases according to Oracle's documentation. Follow these guidelines when you set up your Oracle databases:

- Create a specific Oracle database instance, or identify an existing Oracle instance, to use for ClearQuest data.
- Create two or more separate Oracle database users (each with its login):
  - the ClearQuest schema repository user login
  - one user login for each ClearQuest user database
- Grant each user login the Connect and Resource roles only.

**Note:** We recommend that you associate each Oracle database user with a unique default tablespace that is separate from all other users. The Oracle database users can share the **temporary** tablespace(s), but the temporary tablespace(s) for these users must be separate from the Oracle system tablespace.

**Note:** Oracle is a case sensitive database. If you are employing ClearQuest Multisite or you want to migrate to a different database vendor, you need to evaluate your database case sensitivity settings. See "Database case sensitivity" on page 11 for more information.

### Enhancing Oracle search capabilities

With a standard Oracle installation, you cannot perform a string search on multi-line text fields. For example, in ClearQuest you cannot search for text in a multi-line Notes field.

Oracle does provide an option called the ConText Option (Oracle 7), ConText Cartridge (Oracle 8) or IntermediaText (Oracle 8.1.x) that enables string searches in multi-line text fields. When installed, multi-line text fields become available for queries in ClearQuest.

## ***ConText Option and ConText Cartridge Personality Masks***

The collection of all the personalities for a ConText server is called the personality mask. When a ConText server is started, it is assigned a default personality mask consisting of the DDL (D), DML (M), and Query (Q) personalities. The ones pertinent to ClearQuest are described below:

### **DDL (D) Personality**

The DDL personality enables a ConText server to process requests for creating, optimizing, and dropping text indexes. The text index on a column is what allows users to query the text stored in the column.

This is what's required to run the script, `setup_cq_ctx_policy.sql`

### **DML (M) Personality**

The DML personality enables a ConText server to automatically update the text index for a table when changes to the table are made that require the text index to be updated. Such changes include inserting new records, updating existing records, and deleting existing records.

Without it, text searches are based on text data that was indexed when the context server with M personality was last executed.

**Note:** When systems have a high volume of text inserts, updates, and deletes, assign the DML personality to multiple servers to better distribute the system load.

**Note:** The DML personality server should always be running to avoid searching on obsolete text data.

### **Query (Q) Personality**

The Query personality enables a ConText server to process queries for text searches. If no running ConText servers have the Query personality, queries submitted to ConText will fail. In ClearQuest, an error message will be generated if there are no ConText servers with Q personality running at the time the query is executed.

**Note:** When systems have a high volume of text queries, assign Query personality to multiple servers to better distribute the system load. In some cases where more than one text search is executed simultaneously, a query may fail if there is not enough servers running.

**Note:** Run at least two Context servers with all three personalities.

### ***Intermedia Text Personality Masks***

The DML (M) is the only personality used in ConText server for Intermedia Text. This means a running Context server is not required to run text searches (in 7.3, 8.0, you need to have a Context server with Query personality to perform text searches). However, there are some issues on not searching with the most current text data. Refer to Oracle InterMedia Text documentation for more details.

**Note:** When systems have a high volume of text inserts, updates, and deletes, run multiple servers to better distribute the system load.

**Note:** The Context server should always be running to avoid searching on obsolete text data.

### ***Enabling Oracle 7.x and Oracle 8.0.x multi-line search***

To enable Oracle multi-line text search for Oracle 7.x and 8.0.x with ClearQuest, do the following.

- 1 Install the ConText Option/Context Cartridge according to the Oracle documentation.
- 2 Start at least two ConText servers. Be sure to use the QDM (Query, DDL, DML) personality options. For example:  

```
% ctxsrv -user ctxsys/ctxsys -personality QDM -logfile  
$ORACLE_HOME/ctx/log/ctxsrv1.log &  
% ctxsrv -user ctxsys/ctxsys -personality QDM -logfile  
$ORACLE_HOME/ctx/log/ctxsrv2.log &
```

where `ctxsys/ctxsys` is the default username/password.

**Note:** You may have to create that `ctx/log` directory. You'll also want to run this in the background. Oracle doesn't provide anything to start this automatically at boot time, so you'll either have to run these processes manually or develop a shell script for that purpose. Refer to your Oracle user manuals for additional information.

- 3 To set up the ClearQuest Oracle user to have the necessary privileges, run the following SQL script using Oracle's SQLPlus utility as the Oracle `ctxsys` user.

The SQL script (`setup_cq_ora_user.sql`) can be found in the ClearQuest installation directory (`\\Rational Software\ClearQuest\`).

```
sqlplus ctxsys/<password>@<tnsname>  
@setup_cq_ora_user.sql <cquser>
```

where `<cquser>` is the name of the Oracle login used for creating the ClearQuest database.

- 4 To set up the text indexes required to perform multiline searches, run the SQL script `setup_cq_ctx_policy.sql` located in your ClearQuest installation directory. For example:

```
sqlplus <cquser>/<password>@<tnsname>  
@setup_cq_ctx_policy.sql
```

where `<cquser>` is the name of the Oracle login used for creating the ClearQuest database.

### ***Enabling Oracle 8.1.x multi-line search***

To enable Oracle multi-line text search for Oracle 8.1.x with ClearQuest, do the following.

- 1 Install InterMedia Text according to the Oracle documentation. Generally, this is installed by default when the Oracle server is installed.
- 2 Perform the Post-Installation Setup procedures documented in *Oracle InterMedia Text 8.1.5 Technical Overview*. You can find this guide at:

<http://www.oracle.com/support/>

- 3 Start at least one ConText server. The personality parameter is optional. For example run the following command:

```
ctxsrv -user ctxsys/ctxsys -personality M -logfile
$ORACLE_HOME/ctx/log/ctxsrv.log &
```

where `ctxsys/ctxsys` is the default username/password.

**Note:** You may have to create that `ctx/log` directory. You'll also want to run this in the background. Oracle doesn't provide anything to start this automatically, say at boot time, so you'll either have to run these processes manually or develop a shell script for that purpose.

- 4 Start at least one ConText server. For example:

```
% ctxsrv -user ctxsys/<password> -log ctx.log1 &
```

- 5 To set up the ClearQuest Oracle user to have the necessary privileges, run the following SQL script using Oracle's SQLPlus utility as the Oracle `ctxsys` user.

The SQL script (`setup_cq_ora_user.sql`) can be found in the ClearQuest installation directory (`\\Rational Software\ClearQuest\`).

```
sqlplus ctxsys/<password>@<tnsname>
@setup_cq_ora_user.sql <cquser>
```

where `<cquser>` is the name of the Oracle login used for creating the ClearQuest database.

- 6 To set up the text indexes required to perform multiline searches, run the SQL script `setup_cq_intermedia.sql` located in your ClearQuest installation directory. For example:

```
sqlplus <cquser>/<password>@<tnsname>
```

```
@setup_cq_intermedia.sql
```

where `<cquser>` is the name of the Oracle login used for creating the ClearQuest database.

## Installing and Configuring an Oracle client

The ClearQuest administrator and all ClearQuest Windows end-users must install Oracle Client Software on their local machines before they can install and use ClearQuest. To install Oracle Client Software, follow the Oracle Networking Products documentation.

**Note:** If you are using Oracle 8.0.x and 8.1.x clients, you must have the latest patching installed to operate successfully with ClearQuest Web. For more information, see your latest ClearQuest release notes located at:

- For Windows: `<d>:\ClearQuest\clearquest_readme.htm`  
(where `<d>` is your CD-ROM drive)
- For UNIX:  
`<d>:/products/ClearQuestClient/clearquest_readme.htm`  
(where `<d>` is your CD-ROM drive)

## Creating an Oracle database alias

Before using ClearQuest Windows, all users must use the SQL\*Net Easy Configuration or SQL8\*Net Easy Configuration program to configure their computers to access Oracle databases.

**Important:** Even if you will only be using ClearQuest UNIX clients, you need to use the SQL\*Net Easy Configuration tool to configure the administrator's NT workstation to access the Oracle database. ClearQuest UNIX requires that the administrator machine be a Windows machine.

- 1 From the Start menu, click Oracle for Windows NT > SQL\*Net Easy Configuration if using Oracle 7.x or click Oracle for Windows NT > SQL8\*Net Easy Configuration if using Oracle 8.x and complete these steps:
- 2 Select View Configuration Information to see if your Oracle database administrator configured a Database Alias for you. If not, go to the next step.
- 3 Add a new database alias by selecting Add Database Alias. Click OK.
- 4 Type a SQL\*Net Database Alias (database name your Oracle database administrator set up previously). Make a note of the Database Alias because you will need it during the ClearQuest database setup. Click OK.

**Note:** All ClearQuest users must use the same Database Alias.

- 5 Select TCP/IP as the network protocol to use to communicate with the database. Click OK.
- 6 Type the Host Name (the name of database server machine) and the Database Instance (the system ID or SID). See “Setting up the Oracle Server” on page 28.

**Note:** All ClearQuest users must use the same Database Alias, Database Instance (system ID or SID), TCP/IP protocol, and Host Name (Oracle server machine).

- 7 When you click OK, the SQLNet Easy (or SQLNet8 Easy) Configuration program asks you to confirm your choices. Click Yes to confirm the current configuration information.
- 8 After configuring your database, the installer displays the initial opening screen so that you can configure additional aliases. To quit the program, click Cancel.

## Setting up IBM DB2

To use ClearQuest with IBM DB2 databases, you need to install IBM DB2 7.1 on the machine which you will use as your database server.

**Note:** Please see the ClearQuest release notes before proceeding for more information about using DB2 databases with ClearQuest (Start > Programs > Rational > Rational ClearQuest > Rational ClearQuest Release Notes).

**Note:** DB2 is a case sensitive database. If you are employing ClearQuest Multisite or you want to migrate to a different database vendor, you need to evaluate your database case sensitivity settings. See “Database case sensitivity” on page 11 for more information.

### Creating a new DB2 database

You need to set up one empty DB2 database for the ClearQuest schema repository, and one empty DB2 database for each ClearQuest user database (such as the optional `SAMPL` database). For each DB2 database, complete the following tasks.

- 1 From the Start menu, click IBM DB2 > Control Center.
- 2 Enter the login name and password for the DB2 administrator account and click OK.
- 3 From the DB2 Control Center, expand the machine name that corresponds to the database server on which you will create the database until you see the Databases folder.
- 4 Right-click the Databases folder and choose Create > Database using Wizard.

**Note:** Make sure all DB2 services are running, otherwise this utility will not work.

- 5 Enter a name of the database.

**Note:** DB2 supports database names with eight characters or less.

- 6 Click Finish.
- 7 Expand the database name folder.
- 8 Right-click the Buffer Pools folder and choose Create...
- 9 On the Create Buffer Pool dialog box, enter a name for Buffer pool name (i.e., BFP16K), select Page size = 16 and click OK.
- 10 Right-click the DB2 folder, and choose Stop (remember to mark the checkbox Disconnect all applications), and then Start to restart the database with buffer pool activated.
- 11 Right-click the Table Spaces folder and choose Create > Table space...
  - a Enter a name for Table space name (i.e. TSPRGR16K), select Type of table space = Regular, and Space management = System.
  - b In the Container name section, select Add button and enter a name for Container (i.e. cntr1a\_16K), click OK to close the dialog box.
  - c You should be back in the Create Table Space dialog box, click the Advanced... button.
  - d Select Page size = 16, and select the buffer pool name created earlier for Buffer pool, click OK.
  - e Click OK to close Create Table Space dialog box.
- 12 Right-click the Table Spaces folder again and choose Create > Table space...
  - a Enter a name for Table space name (i.e. TSPTMP16K), enter the data in the table below depending on your database version. On Container name section, select Add button.

Table space entries	DB2 6.1	DB2 6.1
Type of table space =	Temporary	System Temporary
Space management =	System	System

- b In the Add Container dialog box, enter a name for Container (i.e. cntr1b\_16K), click OK to return to the Create Table Space dialog box.

**Note:** Make sure a unique name is used for each container created.

- c Click **Advanced...** button of the **Create Table Space** dialog box.
  - d On the **Advanced** dialog box, select **Page size = 16**, and select the buffer pool name created earlier for **Buffer pool**, click **OK**.
  - e Click **OK** to close the **Create Table Space** dialog box.
- 13** Right-click the database name and select **Configure...**
- a Select **Performance** tab, set value for the parameter **Application heap size = 512** and the parameter **Application control heap size = 512**.
  - b Select **Log** tab, set value for the parameter **Log File size = 1000**, the **Number of Primary Log Files = 15**, and **Number of Secondary Log Files = 10**.
  - c Click **OK** to save changes.
- 14** Right-click the **DB2** folder, and choose **Stop**, and then **Start** to restart the database and make the configuration parameters effective.

## Installing DB2 client

All ClearQuest Windows client users (including the ClearQuest administrator) must install DB2 client software on their local machines before they can install and use ClearQuest. To install DB2 client software, follow the IBM documentation.

**Note:** If the client and server machines are the same, you can skip this step.

## Creating a DB2 database alias

Before using ClearQuest Windows client, all users must use the Client Configuration Assistant to create a DB2 alias for each ClearQuest schema repository and user database they will use.

- 1** Install DB2 Client Software according to the IBM DB2 documentation.
- 2** From the Start menu, choose **IBM DB2 > Client Configuration Assistant**. The Welcome dialog box appears.

- 3 Click **Add database**.
- 4 Click **Search the network**.
- 5 Click **Next**.
- 6 Expand the **Known Systems** folder; if you see the database server machine on which the ClearQuest database resides, expand it and select the database name for which you want to create an alias.  
  
**Note:** If you don't see the machine you need, try expanding the **Other Systems** folder. If you don't see the machine you need in the **Other Systems** folder, talk to your database administrator. There may be a network problem.
- 7 Expand the database server machine folder you need and select the database for which you need to create an alias.
- 8 Click **Next**.
- 9 From the Start menu, click **Oracle for Windows NT > SQL\*Net Easy Configuration** if using Oracle 7.x or click **Oracle for Windows NT > SQL8\*Net Easy Configuration** if using Oracle 8.x and complete these steps:
- 10 Select **View Configuration Information** to see if your Oracle database administrator configured a Database Alias for you. If not, go to the next step.
- 11 Add a new database alias by selecting **Add Database Alias**. Click **OK**.
- 12 Type a **SQL\*Net Database Alias** (database name your Oracle database administrator set up previously). Make a note of the Database Alias because you will need it during the ClearQuest database setup. Click **OK**.  
  
**Note:** All ClearQuest users must use the same Database Alias.
- 13 Click **Finish**.
- 14 Repeat steps 1 - 13 for each schema repository and user database.  
  
Now that you have set up your DB2 databases, proceed to "Installing and configuring ClearQuest for an administrator" on page 39.

# 3

## Installing and configuring ClearQuest for an administrator

Before installing ClearQuest on client machines you must install it on the administrator's machine, set up licensing, and set up your schema repository and user databases.

If you are using an Oracle or DB2 database, install the Oracle or DB2 client software **before** installing ClearQuest. See “Setting up the Oracle Server” on page 28 or see “Setting up IBM DB2” on page 35 for more information.

This chapter covers the following topics:

- “Installing ClearQuest” on page 40
- “Creating ClearQuest databases” on page 41
- “Licensing Rational Software” on page 46
- “Installing Crystal Reports” on page 48

## Installing ClearQuest

To install ClearQuest for administrators:

- 1 Load the ClearQuest CD-ROM on the machine you want to administer ClearQuest.
- 2 If the setup program does not run automatically, navigate to the top level directory of the CD-ROM and double-click setup.exe.
- 3 Click the button **Configure License** and enter your ClearQuest and if applicable, your ClearQuest MultiSite license information. Follow the instructions on your License Certificate and in the online Help for the License Key Administrator.

**Note:** Rational ClearQuest uses a license server. If you don't already have a license server installed, it is available on the Rational Solutions for Windows CD. For more information, see *Administering Licenses for Rational Suite*, available on the Rational Solutions for Windows Online Documentation CD.

- 4 To install ClearQuest for administrator do one of the following:
  - To perform a standard installation of ClearQuest, select the Typical install option.
  - To include an evaluation database with your ClearQuest installation, select the Custom install option, expand the ClearQuest node and check the Evaluation Database Installation box.

The Rational Software Setup wizard prompts you through the ClearQuest Windows installation.

### ***What do you do next?***

- “Configuring ClearQuest” on page 55
- “Installing and configuring ClearQuest Windows for end-users” on page 59

# Configuring ClearQuest

## Creating ClearQuest databases

After you install ClearQuest and have created the necessary empty vendor databases (see “Configuring vendor databases” on page 9), you must create the ClearQuest databases (schema repository and user databases). Initially you can create a sample user database to use while you familiarize yourself with the product. You can create your production user databases later.

### *Creating a schema repository*

- 1 Launch the ClearQuest Maintenance Tool (Start > Programs > Rational ClearQuest > Rational ClearQuest Maintenance Tool).

**Note:** The first time you launch ClearQuest, the Maintenance Tool runs automatically.

- 2 Select Create a new schema repository and click Next.
- 3 Select the vendor database you plan to use, enter the properties appropriate for that vendor, then click Next. Save this information for clients to use when they connect to the databases. The information to enter is as follows:

- MS\_ACCESS

- Enter a name for the schema repository. Enter the entire path to the file using a UNC style path. For example:

```
\\DevServer\ProjectShare\CQ_DBS\schema_repo.mdb
```

You can browse to the directory where you want to create the database. Be sure to browse using the Network Neighborhood to preserve the UNC style path name.

- SQL\_ANYWHERE

- Enter a name for the schema repository. Enter the entire path to the file using a UNC style path. For example:

```
\\DevServer\ProjectShare\CQ_DBS\schema_repo.db
```

You can browse to the directory where you want to create the database. Be sure to browse using the Network Neighborhood to preserve the UNC style path name.

- Enter the name of the database server.
- Enter the protocols used to communicate with the SQL Anywhere server.
- Enter the database host name. The database host machine must be visible to the client machines via network share and via one or more of the communication protocols. For TCP/IP, this can also be the IP address.
- SQL\_SERVER
  - Enter an SQL Server database name for the database that will contain the schema repository.
  - Enter the name of the database server.

**Note:** If you are using ClearQuest UNIX, each UNIX client must be able to access this server host name exactly as it appears in this entry.

- Enter the database owner (DBO or Administrator) login.
- Enter the password for the database owner (DBO or Administrator) login.
- Enter the general purpose or read/write login.
- Enter the password for the general purpose or read/write user login.
- Enter the schema repository or read-only user login.
- Enter the password for the schema repository or read-only login.

- **ORACLE**
  - Enter the TNS name (SQL\*Net Alias pointing to the Oracle instance).
  - Enter the Oracle login you created for the schema repository.
  - Enter the password for the login.
  - The following options need to be entered in the Connect Options field, delimited by semi-colons. For example,

```
Host=<name>;SID=<name>;Server_ver=8.0;Client_ver=7;
Lob_type=LONG
```

Option	Definition
Host	The name of the database server machine. If your ClearQuest deployment will include both Unix and Windows clients the Host name is mandatory.
SID	The name of the Database Instance. If your ClearQuest deployment will include both Unix and Windows clients the SID name is mandatory.  <b>Note:</b> On UNIX, the SID is case sensitive.
Server_ver	Provide the version of the Oracle server you are using. Possible values are 7, 8.0, and 8.1 (For Oracle 8i, use 8.1.)
Client_ver	Provide the version of the Oracle client software you are using. Possible values are 7, 8.0, and 8.1 (For Oracle 8i, use 8.1.)  If ClearQuest client users want to use a different Oracle client version than what is entered here by the administrator, they'll need to override the set options manually. The default setting is 7. See Release Notes for details.
Lob_type	Set the type of data you'll be using. The valid data type is LONG.

**Note:** All ClearQuest users must use the same SQL\*Net Alias (TNSname), Database Instance (system ID or SID), TCP/IP protocol, and Host Name (Oracle server machine).

- 4 We recommend that you create a sample database using one of the provided schemas. Select a schema, give the sample database a name, then click **Next**.
- 5 If you created a sample database, you must select a vendor and enter the database properties. When you are finished, click **Next**.
- 6 You can save these settings as a default profile, or click **Finish** to complete the setup. The profile records the entries you made and saves them to a file (the default name is `cqprofile.ini`). Clients can connect to the database by using the profile file instead by typing the connection information.

### ***Creating a user database***

You create ClearQuest user databases with the ClearQuest Designer, after you have successfully created a schema repository.

**Note:** Unless you are using MS Access, you must have first created empty vendor databases before you can create the ClearQuest databases.

- 1 From the Start menu, choose **Programs > Rational ClearQuest > ClearQuest Designer**.
- 2 Click **Next** when the Rational Schema Repository dialog box appears.
- 3 Click **OK** when the ClearQuest Designer Login dialog box appears.

**Note:** When you click **OK**, you will be logging in with the default ClearQuest administrator login name and password. The default user name is “admin” the password is null and should be left blank. You should change this password and create a new login at your earliest convenience.
- 4 Click **Cancel** when the Open Schema dialog box appears.
- 5 Choose **Database > New Database**.
- 6 Enter a logical name for the database you want to create. This name must be five characters or less.
- 7 Click **Next**.

- 8** Select the vendor database you plan to use, enter the properties appropriate for that vendor, then click Next. For more information about the required parameters for vendor databases, see step 3 under “Creating a schema repository” on page 41.
- 9** Click Next.
- 10** Click Next to accept the default polling parameters.
- 11** Choose a schema with which to associate your database. You must associate the database with a schema.
- 12** Click Finish.

## Licensing Rational Software

ClearQuest administrator sets up and maintains licenses using the Rational License Administrator.

For more information about licensing Rational Software products, see the book, *Administering Licenses for Rational Software*.

Rational Software product licensing provides two types of licenses:

- **Node-locked license:** enables a single user to install and use a Rational Software product on a specific system.
- **Floating license:** enables a specified number of users to install and use a Rational Software product on their systems. Floating licenses are shared among all users of the licensed software.

**Note:** If you purchase ClearQuest with a node-locked license, your ClearQuest Web functionality is limited to the ability to submit defects and to run one query (predefined by your ClearQuest administrator). To get full ClearQuest Web functionality, you need to purchase a floating license.

The license key certificate included with your purchase of ClearQuest indicates the type of licenses you are working with and the license keys you need to install.

Rational Software makes it easy to install and maintain licenses by providing the Rational License Administrator. Rational Software also provides GLOBEtrötter Inc.'s FLEXIm License Manager for administering floating licenses.

The Rational License Administrator is automatically installed when you install ClearQuest. To use the Rational License Administrator, select Rational ClearQuest > License Administrator from the Start menu. For information about installing your product licenses so you can get started using ClearQuest, see the Rational License Administrator online Help.

To install the FLEXIm License Manager, select GLOBEtrötter FLEXIm License Server from the list of products displayed in the Rational Software Setup program. For additional information about

FLEXlm licensing, see the Rational License Administrator online Help.

## ClearQuest MultiSite Licensing

ClearQuest MultiSite requires both a ClearQuest license and a ClearQuest MultiSite license. Any access to a replicated database requires both a ClearQuest and a ClearQuest MultiSite license, see *Administering Rational ClearQuest MultiSite*.

You can calculate the number of ClearQuest MultiSite licenses your site needs by determining how many developers will access replicated databases. If all of your developers will access replicated databases, you need the same number of ClearQuest MultiSite licenses as ClearQuest licenses. If not all developers will access replicated databases, you can purchase fewer ClearQuest MultiSite licenses.

For example, a company has two sites, with 20 developers at site A and 5 developers at site B. The company has three databases at site A; two of them will be replicated to site B and one will not be replicated. Five of the developers at site A will access only the unreplicated database, and the remaining 15 will work in all databases. Therefore, the company needs to purchase the following numbers of licenses:

Site	Number of ClearQuest Licenses	Number of ClearQuest MultiSite Licenses
A	20	15
B	5	5

**Note:** This example assumes that you purchase a ClearQuest license for each user. If you have fewer ClearQuest licenses than users, you can purchase a proportionate number of ClearQuest MultiSite licenses. For example, if site B purchased three ClearQuest licenses, they would also purchase three ClearQuest MultiSite licenses.

## Installing Crystal Reports

If you want to customize the defect reports that ship with ClearQuest, you must install Crystal Reports Professional Edition 8.0. If you currently have Crystal Reports 6.0 installed, you will need to un-install it and install Crystal Reports 8.0 **before** installing Rational ClearQuest. The Crystal Reports Installation CD is included with your ClearQuest Media Kit. For more information on report creating and authoring, refer to *Introducing Rational ClearQuest* and the ClearQuest on-line help systems.

To install Crystal Reports, use the Crystal Reports installation directions that come with the CD.

**Note:** Users who will not be editing existing or creating new report formats, do not need to install Crystal Reports.

# 4

## Installing and Configuring ClearQuest MultiSite

This chapter describes how to install ClearQuest MultiSite. You install ClearQuest MultiSite using the same steps you follow when installing ClearQuest (see “Installing ClearQuest” on page 40), with several additional considerations. It’s important to read this chapter before installing ClearQuest MultiSite.

**Note:** If you are installing ClearQuest MultiSite, be very careful when designing a system that utilizes databases created through different database vendors. Case sensitivity conflicts between database vendors may cause your MultiSite synchronizations operations to fail, see “Database case sensitivity” on page 11. And, SQL language differences between vendors may cause certain queries to be unreadable by the ClearQuest client. See *Administering ClearQuest MultiSite* for more information.

Before installing, you should read the following chapters in *Administering Rational ClearQuest MultiSite*, Chapter 1, “Introducing ClearQuest MultiSite” and Chapter 2, “Deploying ClearQuest MultiSite”.

This chapter covers the following topics:

- “ClearQuest MultiSite overview” on page 50
- “Installing ClearQuest MultiSite Administrator” on page 57
- “Installing Rational Shipping Server” on page 58
- “Configuring ClearQuest MultiSite” on page 59

## ClearQuest MultiSite overview

ClearQuest MultiSite<sup>®</sup> adds a powerful capability to Rational ClearQuest. With ClearQuest MultiSite, developers at different locations can use the same schema and user database. Each location (*site*) has synchronized copies (*replicas*) of the user database and its respective schema repository. At any time, a site can propagate the changes made in its particular replicas to other sites, by sending update packets. The update process can be scheduled by any number of methods to be automatic or can be started manually.

An organization can use ClearQuest MultiSite to distribute independent, but related development efforts across multiple cities, nations, or continents. For example, a company in the United States has development and testing sites in India, Argentina, Japan, and Australia. Because it is impractical for all engineers to access the ClearQuest database in the United States, the company uses ClearQuest MultiSite to distribute the database.

## Understanding the architecture of ClearQuest MultiSite

Before you start using ClearQuest MultiSite, you should be familiar with the architecture of ClearQuest.

In summary, ClearQuest uses database sets to organize data. A database set consists of a schema repository and each of its associated user databases. A schema repository holds the metadata that defines user databases (schemas), while a user database is where record information is stored and is what users access to submit and modify records. One schema repository can support multiple user databases. For more information about ClearQuest architecture, see the *Administering Rational ClearQuest* manual.

ClearQuest MultiSite replicates both a schema repository and an associated user database when it creates a replica site. Consequently, when you work with ClearQuest replicas, you are working with two database replicas, a replicated schema repository and a user database replica.

A replica is a named set of one replicated schema repository and one user database replica. Replicas reside at physical sites.

---

Term	Definition
Clan	A clan represents a group of replicas that use the same schema repository (a database set). A clan consists of one or more replica families. Replicas originating from the same database set use the same clan name. The clan is named when the first replica is activated. The clan name must be unique.
Family	A family consists of one or more replicas of the same schema repository or user database. The family name is the same name as the five-character logical database name of the originating ClearQuest database.
Site	A named collection of replicas at the same location consisting of a replicated schema repository and one or more of its user databases..

---

---

<b>Term</b>	<b>Definition</b>
Replica	A copy of a ClearQuest database and its associated schema repository.
Host	The LAN name or IP address of the network node that has access to a site. The host name is used with the Rational Shipping Server and refers to the machine where the storage bays for the respective replica are located and must be consistent with the name of the host specified when you configured the MultiSite Control Panel.

---

ClearQuest MultiSite organizes replicas three ways:

- clans
- families
- sites

### **Using clans**

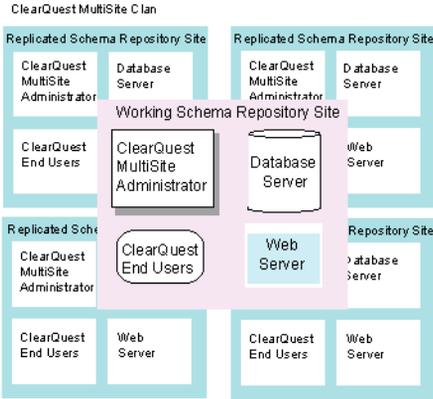
A clan represents all the replicas of a single schema repository and its associated databases. Within a clan, a working schema repository is used to propagate changes to schemas and to create additional user databases which can then be replicated.

**Note:** There can be only one master site in a ClearQuest MultiSite clan.

### ***Understanding the role of the working schema repository site***

Within a ClearQuest MultiSite clan, there are two types of sites: a working schema repository site and a replicated schema repository

site. Each site can perform different tasks and has a different role within MultiSite.



The working repository site within a clan is used to propagate changes to schemas and to create additional user databases which can then be replicated. Only the working schema repository can make schema changes and a clan can have only one working schema repository.

Type of Site	Supported tasks
working schema repository site	<ul style="list-style-type: none"> <li>Modifies clan schemas.</li> <li>Creates new ClearQuest clan schema repository and user databases.</li> <li>Submit new records.</li> <li>Create synchronization packages.</li> <li>Administers MultiSite activities.</li> <li>Administers users of which it has mastership.</li> </ul>
replicated schema repository site	<ul style="list-style-type: none"> <li>Submit new records.</li> <li>Modifies records of which it has mastership.</li> <li>Administers MultiSite activities.</li> <li>Administers users of which it has mastership.</li> </ul>

**What software needs to be installed?**

Consult the following table for software installation requirements per role. We recommend that you co-locate the ClearQuest MultiSite Administrator and Shipping Server roles. We also

recommend that you use a stand alone machine for the database server.

<b>Role</b>	<b>Purpose</b>	<b>Install ...</b>
ClearQuest MultiSite Administrator*	For ClearQuest and ClearQuest MultiSite administration.  if applicable, Shipping server	“Installing ClearQuest MultiSite Administrator” on page 57. “Configuring ClearQuest MultiSite” on page 59. “Installing Rational Shipping Server” on page 58. To configure the shipping server see “Configuring Store and Forward” in <i>Administering Rational ClearQuest MultiSite</i> .
ClearQuest client	For viewing and submitting ClearQuest records.	“Installing and configuring ClearQuest Windows for end-users” on page 63.
ClearQuest web server	Serves the ClearQuest Web client to users.	“Installing and Configuring ClearQuest Web” on page 93.
Database server	Holds all ClearQuest schema repository and user databases.	“Configuring vendor databases” on page 9.
ClearQuest MultiSite UNIX	For viewing and submitting ClearQuest records.  ClearQuest MultiSite administration.	“Installing the ClearQuest UNIX client” on page 73.  “Configuring ClearQuest MultiSite” on page 59.

\* If you are installing ClearQuest MultiSite on UNIX, the MultiSite `multiutil` commands can be executed on the UNIX server if you have the appropriate licenses.

## Installing the Rational Shipping Server

Both ClearQuest MultiSite and Clearcase MultiSite use the same store-and-forward components (called the Rational Shipping Server) to transfer update packets. If you are installing ClearQuest MultiSite on a machine where ClearCase or ClearCase MultiSite is already installed, the shipping server is already installed and the installation option will be deactivate in the ClearQuest installation program. This is to ensure integrity with your ClearCase installation.

**Warning:** Do not attempt to install the Rational Shipping Server on a machine that has ClearCase LT Client installed. If you attempt to do this, an error message will be displayed during the installation process.

Consult the following table for installation conditions:

<b>Condition:</b>	<b>Action:</b>
If ClearCase or ClearCase MultiSite is not installed on the machine	Install Rational Shipping Server from the ClearQuest or Rational Suites Installation CD. Configure the MultiSite Control Panel for use with ClearQuest MultiSite, see Administering ClearQuest MultiSite.
If ClearCase MultiSite is already installed on the machine	The MultiSite Control Panel and Rational Shipping Server are already installed. Configure the MultiSite Control Panel for use with ClearQuest MultiSite, see Administering ClearQuest MultiSite.
If ClearCase is already installed on the machine	Install the ClearCase MultiSite component from the ClearCase CD, see "Installing the Rational Shipping Server from the ClearCase CD" on page 55.
If ClearCase LT Server is installed on the machine	Install Rational Shipping Server from the ClearQuest or Rational Suites Installation CD. Configure the MultiSite Control Panel for use with ClearQuest MultiSite, see Administering ClearQuest MultiSite.
If ClearCase LT Client is installed on the machine	Do not install the Rational Shipping Server on this machine.

### ***Installing the Rational Shipping Server from the ClearCase CD***

If you are installing ClearQuest MultiSite on a machine where ClearCase is already installed, you cannot use the Rational ClearQuest CD to install the Rational Shipping Server. You will need to install Rational ClearCase MultiSite from the ClearCase installation CD.

**Note:** You need either a ClearQuest MultiSite license or a ClearCase MultiSite license to use the Rational Shipping Server or the MultiSite Control Panel. Although you are allowed to install

**Rational ClearCase MultiSite, you cannot use it unless you have a license.**

## Installing ClearQuest MultiSite Administrator

If you are performing this installation at the master site, you need to create your vendor database. For more information refer to “Installing and Configuring ClearQuest MultiSite” on page 49.

**Note:** If you are installing ClearQuest MultiSite on the same machine as your SQL Server 7.0 or 2000 database, the ClearQuest MultiSite commands may fail if the SQL Server Client software is not also installed.

- 1 Load the ClearQuest CD-ROM on the machine you want to designate as the ClearQuest MultiSite Administrator.
- 2 If the setup program does not run automatically, navigate to the top level directory of the CD-ROM and double-click `setup.exe`.
- 3 Click the **Configure License** button and enter your ClearQuest license and if applicable, your ClearQuest MultiSite license information. Follow the instructions on your License Certificate and in the online Help for the License Key Administrator.

**Note:** Rational ClearQuest uses a license server. If you don't already have a license server installed, it is available on the Rational Solutions for Windows CD. For more information, see *Administering Licenses for Rational Suite*, available on the Rational Solutions for Windows Online Documentation CD.

- 4 To install ClearQuest MultiSite, select the Custom install option, expand the ClearQuest node and check the following boxes:
  - MultiSite Administration Tools
  - ClearQuest Administration Tools
  - Required Files

## Installing Rational Shipping Server

If you have ClearCase MultiSite installed on your machine, the Rational Shipping Server is already installed. If you have ClearCase installed without the MultiSite features, you will have to install the Rational Shipping Server from your ClearCase CD.

**Note:** If you are installing ClearQuest MultiSite on a UNIX platform, you will have to have an installation of ClearCase MultiSite to use the Rational Shipping Server.

- 1 Load the ClearQuest CD-ROM on the machine you want to designate as the ClearQuest MultiSite Administrator.
- 2 If the setup program does not run automatically, navigate to the top level directory of the CD-ROM and double-click setup.exe.
- 3 Click the Configure License button and enter your ClearQuest license and if applicable, your ClearQuest MultiSite license information. Follow the instructions on your License Certificate and in the online Help for the License Key Administrator.

**Note:** Rational ClearQuest uses a license server. If you don't already have a license server installed, it is available on the Rational Solutions for Windows CD. For more information, see *Administering Licenses for Rational Suite*, available on the Rational Solutions for Windows Online Documentation CD.

- 4 To install ClearQuest MultiSite, select the Custom install option, expand the ClearQuest node and check the Rational Shipping Server box.

**Note:** If the Rational Shipping Server box is not shown as a node, you already have ClearCase installed on your computer. If you have ClearCase MultiSite installed on your machine, nothing further is required. If you have ClearCase installed without the MultiSite features, you will have to install the Rational Shipping Server from your ClearCase CD. For instructions on how to complete this, consult your *Installing Rational ClearCase* guide.

The Rational Software Setup wizard prompts you through the ClearQuest MultiSite installation.

### ***What do you do next?***

- “Configuring ClearQuest MultiSite” on page 59
- “Installing and configuring ClearQuest Windows for end-users” on page 59
- Optionally, “Installing and Configuring ClearQuest Web” on page 93
- Optionally, “Installing and configuring ClearQuest UNIX for end-users” on page 69

## **Configuring ClearQuest MultiSite**

### **Creating ClearQuest databases**

After you install ClearQuest and have created the necessary empty vendor databases (see “Configuring vendor databases” on page 9), you must create the ClearQuest databases (schema repository and user databases). Initially you can create a sample user database to use while you familiarize yourself with the product. You can create your production user databases later.

#### ***Creating a schema repository***

- 1 Launch the ClearQuest Maintenance Tool (Start > Programs > Rational ClearQuest > ClearQuest Maintenance Tool).

**Note:** The first time you launch ClearQuest, the Maintenance Tool runs automatically.

- 2 Select Create a new schema repository and click Next.
- 3 Select the vendor database you plan to use, enter the properties appropriate for that vendor, then click Next. Save this information for clients to use when they connect to the databases. The information to enter is as follows:
  - **SQL\_SERVER**
    - Enter the SQL Server database name for the database that will contain the schema repository.
    - Enter the name of the database server.

**Note:** If you are using ClearQuest UNIX, each UNIX client must be able to access this server host name exactly as it appears in this entry.

- Enter the database owner (DBO or Administrator) login.
- Enter the password for the database owner (DBO or Administrator) login.
- Enter the general purpose or read/write login.
- Enter the password for the general purpose or read/write user login.
- Enter the schema repository or read-only user login.
- Enter the password for the schema repository or read-only login.
- ORACLE
  - Enter the TNS name (SQL\*Net Alias pointing to the Oracle instance).
  - Enter the Oracle login you created for the schema repository.
  - Enter the password for the login.
  - The following options need to be entered in the Connect Options field, delimited by semi-colons. For example,

```
Host=<name>;SID=<name>;Server_ver=8.0;Client_ver=7;  
Lob_type=LONG
```

---

Option	Definition
Host	The name of the database server machine. If your ClearQuest deployment will include both Unix and Windows clients the Host name is mandatory.
SID	The name of the Database Instance. If your ClearQuest deployment will include both Unix and Windows clients the SID name is mandatory.  <b>Note:</b> On UNIX, the SID is case sensitive.
Server_ver	Provide the version of the Oracle server you are using. Possible values are 7, 8.0, and 8.1 (For Oracle 8i, use 8.1.)

---

Option	Definition
Client_ver	<p>Provide the version of the Oracle client software you are using. Possible values are 7, 8.0, and 8.1 (For Oracle 8i, use 8.1.)</p> <p>If ClearQuest client users want to use a different Oracle client version than what is entered here by the administrator, they'll need to override the set options manually. The default setting is 7. See Release Notes for details.</p>
Lob_type	Set the type of data you'll be using. The valid data type is LONG.

**Note:** All ClearQuest users must use the same SQL\*Net Alias (TNSname), Database Instance (system ID or SID), TCP/IP protocol, and Host Name (Oracle server machine).

- 4 We recommend that you create a sample database using one of the provided schemas. Select a schema, give the sample database a name, then click Next.
- 5 If you created a sample database, you must select a vendor and enter the database properties. When you are finished, click Next.
- 6 You can save these settings as a default profile, or click Finish to complete the setup. The profile records the entries you made and saves them to a file (the default name is `cqprofile.ini`). Clients can connect to the database by using the profile file instead by typing the connection information.

### Setting up mastership for records

At the master site, you'll need to modify your schema and add the `ratl_mastership` field to the record form of any record type you will use with ClearQuest MultiSite. By allowing users to access this field (adding it to your record form), any ClearQuest users can change the mastership of any record, if they are at the mastering replica site of respective record.

For details, see Chapter 7 "Understanding Mastership" in *Administering ClearQuest MultiSite*.

### ***Creating a user database***

You create ClearQuest user databases with the ClearQuest Designer, after you have successfully created a schema repository.

**Note:** You must have first created empty vendor databases before you can create ClearQuest databases.

- 1 From the Start menu, choose **Programs > Rational ClearQuest > ClearQuest Designer**.
- 2 Click **Next** when the Rational Schema Repository dialog box appears.
- 3 Click **OK** when the ClearQuest Designer Login dialog box appears.  
**Note:** When you click **OK**, you will be logging in with the default ClearQuest administrator login name and password. The default user name is “admin”, the password is null and should be left blank. You should change this password and create a new login as your earliest convenience.
- 4 Click **Cancel** when the Open Schema dialog box appears.
- 5 Choose **Database > New Database**.
- 6 Enter a logical name for the database you want to create. This name must be five characters or less.
- 7 Click **Next**.
- 8 Select the vendor database you plan to use, enter the properties appropriate for that vendor, then click **Next**. For more information about the required parameters for vendor databases, see step 3 under “Creating a schema repository” on page 59.
- 9 Click **Next**.
- 10 Click **Next** to accept the default polling parameters.
- 11 Choose a schema with which to associate your database. You must associate the database with a schema.
- 12 Click **Finish**.

# 5

## Installing and configuring ClearQuest Windows for end-users

ClearQuest Windows must be installed on each end-user machine. When ClearQuest Windows is installed and connected to the database, users can enter and modify records.

**Note:** It is also possible to allow users to install the ClearQuest Windows client from a network location, for more information see “Silent Installation of Rational ClearQuest” on page 125.

This chapter covers the following topics:

- “Installing ClearQuest for Windows end-users” on page 64.
- “Connecting to ClearQuest databases” on page 64.
- “Enabling E-mail notification for Windows end users” on page 66.

## Installing ClearQuest for Windows end-users

To install ClearQuest Windows for end-users:

- 1 Load the ClearQuest CD-ROM.
- 2 If the setup program does not run automatically, navigate to the top level directory of the CD-ROM and double-click `setup.exe`.  
  
The Rational Software Setup wizard prompts you through the ClearQuest Windows installation.
- 3 Choose the Typical installation.
- 4 Launch the License Administrator to enter your ClearQuest licenses.

## Connecting to ClearQuest databases

After installing ClearQuest Windows for your end user, (either for an initial or an upgrade installation) they will need to connect (or re-connect) to an existing schema repository. You must provide them with the database properties information.

You can create a database profile for client users to use to connect to the schema repository, see step 6 of “Connecting to ClearQuest databases” on page 64.

**Note:** If you are using Oracle or DB2, your client users will need to install the respective client software before installing ClearQuest. For more information, see “Installing and Configuring an Oracle client” on page 33 or see “Creating a DB2 database alias” on page 37.

The following instructions apply to client users who need to connect to a schema repository:

- 1 Launch the ClearQuest Maintenance Tool (Start > Programs > Rational ClearQuest > ClearQuest Maintenance Tool).

**Note:** The first time you launch ClearQuest Windows, the Maintenance Tool runs automatically.

- 2 Select **Connect to Existing schema repository** and click **Next**.
- 3 Select the vendor database that you plan to use, enter the properties appropriate for that vendor, then click **Next**.

Enter the information provided by your administrator, or, if your ClearQuest administrator created a user profile file (usually called `cqprofile.ini`) that includes the database information you need, click **Load Profile** to navigate to the profile file.

If you did not create a profile for client users, they must enter the following information:

- **MS\_ACCESS**
  - Enter the entire path to the schema repository using a UNC style path. For example:  
`\\DevServer\ProjectShare\CQ_DBS\schema_repo.mdb`  
You can browse to the directory containing the database. Be sure to browse using the **Network Neighborhood** to preserve the UNC style path name.
- **SQL\_ANYWHERE**
  - Enter the path to the schema repository using a UNC style path. For example:  
`\\DevServer\ProjectShare\CQ_DBS\schema_repo.mdb`  
You can browse to the directory containing the database by using **Network Neighborhood**, which preserves the UNC style path name.
  - Enter the name of the database server.
  - Enter the protocols used to communicate with the SQL Anywhere server.
  - Enter the database host name.
- **SQL\_SERVER**
  - Enter the SQL Server database name for the database containing the schema repository.
  - Enter the name of the database server.
  - Enter the schema repository or read-only user login.

- Enter the password for the schema repository or read-only login.
  - ORACLE
    - Enter the SQL\*Net Alias (alias pointing to the Oracle instance).
    - Enter the Oracle login created for the schema repository.
    - Enter the password for the login.
  - DB2
    - Enter the Database Alias name (alias pointing to the DB2 database).
    - Enter the DB2 login created for the schema repository.
    - Enter the password for the login.
- 4 Click Finish to complete the connection.

## Enabling E-mail notification for Windows end users

After installing ClearQuest Windows (either for an initial or an upgrade install), users must enable e-mail notification if they want to receive automatic e-mail messages from ClearQuest Windows. To do this:

- 1 Launch ClearQuest Windows (Start > Programs > Rational ClearQuest > Rational ClearQuest).
- 2 Choose View > E-mail Options. This opens the E-mail Setup dialog.
- 3 Select Enable E-mail Notification.
- 4 Select either SMTP or MAPI
- 5 If you entered SMTP:
  - Enter the SMTP host address of your mail server.
  - Enter your e-mail address.
  - Click Finish.
- 6 If you entered MAPI:

- Choose a MAPI profile from the list.
- Click **Finish**.



# 6

## Installing and configuring ClearQuest UNIX for end-users

This chapter describes how to install ClearQuest UNIX. You, the ClearQuest administrator, set up the databases to use with ClearQuest, install ClearQuest, and provide the required setup information to each client user.

This chapter covers the following topics:

- “Understanding the install process” on page 70.
- “Installing the ClearQuest UNIX client” on page 73.
- “Configuring database connectivity” on page 78.
- “Configuring ClearQuest UNIX” on page 89.
- “Enabling E-mail notification for UNIX end users” on page 92.

## Understanding the install process

If you plan to use ClearQuest UNIX clients with your ClearQuest installation, the installation must include the following:

### On your database server

- 1 Set up your database product on your database server. As the ClearQuest administrator, you are responsible for setting up the databases your users will use with ClearQuest. See “Choosing a database vendor” on page 10.
- 2 Install and configure your vendor database alias. See “Creating an Oracle database alias” on page 33, and “Creating a DB2 database alias” on page 37.

**Note:** You do not have to create an alias for a Microsoft SQL Server database.

- 3 Optionally, if you are using Oracle as your database vendor, you can enable multi-line searches by installing Oracle search options. See “Enhancing Oracle search capabilities” on page 28.
- 4 Configure the database connectivity.
  - a If you are using Oracle as your database vendor, install OpenLink Request Broker to enable database connections. See “Installing OpenLink Request Broker with Oracle” on page 80.
  - b If you are using Microsoft SQL Server as your database vendor, see “Installing OpenLink Request Broker with Microsoft SQL Server” on page 78.
  - c If you are using DB2 as your database vendor, use the DB2 administrator tool, see “Configuring DB2 databases for ClearQuest UNIX” on page 86.

**Note:** The OpenLink Request Broker software can instead be installed on the UNIX file server if the UNIX file server is NFS mountable by the database server, however, it needs to execute locally on the database server.

## On the Windows administrator workstation

- 1 Install the database vendor client software. See “Installing and Configuring an Oracle client” on page 33 and “Installing DB2 client” on page 37. If you are using Microsoft SQL Server as your database vendor, you do not need to install client software.
- 2 Install ClearQuest for Windows on the administrator’s workstation and create the ClearQuest databases. See “Installing and configuring ClearQuest for an administrator” on page 39.  
**Note:** The ClearQuest administrator version must be installed on a Windows machine. All ClearQuest customizations are done with the ClearQuest Designer, a Windows-only application.
- 3 Create a schema repository and the user databases. See “Creating ClearQuest databases” on page 41.
- 4 Optionally, customize your installation. See the *Administering Rational ClearQuest* guide for details on customizing ClearQuest.
- 5 Optionally, install Crystal Reports. “Installing Crystal Reports” on page 48.
- 6 Optionally, install and configure ClearQuest Windows Workstations. “Installing and configuring ClearQuest Windows for end-users” on page 63.

## On the UNIX file server

If you choose to do a network install, the UNIX file server must be NFS mountable by all the UNIX ClearQuest client machines and by the Oracle database server.

- 1 If you are using DB2 as database vendor you will need to install the DB2 client software on the UNIX file server. Follow the DB2 instructions for installing the client.
- 2 Install ClearQuest UNIX client. See “Installing the ClearQuest UNIX client” on page 73.

### **On the UNIX end user machine**

- 1** If you are using DB2 as database vendor you will need to install the DB2 client software on the UNIX end user machine. Follow the DB2 instructions for installing the client.
- 2** If not doing a network install, you will need to install ClearQuest UNIX client on the UNIX end user machine. See “Installing the ClearQuest UNIX client” on page 73.
- 3** Launch the ClearQuest UNIX client and connect the client the database. See “Configuring ClearQuest UNIX” on page 89.

## Installing the ClearQuest UNIX client

For ClearQuest UNIX, the system administrator needs to install the ClearQuest client software and let all client users know where to find the installation.

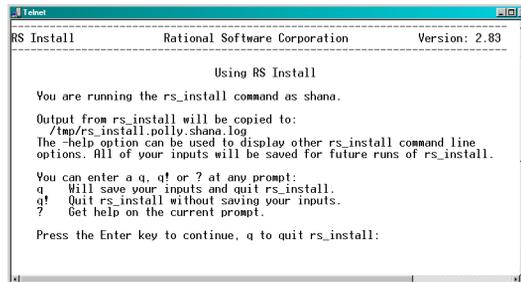
**Note:** When you install the ClearQuest UNIX client, you also install all the ClearQuest MultiSite functionality. This functionality will be available to the user only if a ClearQuest MultiSite license is enabled.

To install the ClearQuest client, do the following:

- 1 Log in as the user who will own the ClearQuest installation. This user will perform administrative functions such as managing the database registry.

**Note:** All other users need read-only access to the installation directories.

- 2 From the ClearQuest CD, run `rs_install`. The License Agreement menu will be displayed. Read the license agreement and enter `y` or `yes` to accept the agreement.
- 3 The next prompt will ask if you want this license agreement displayed the next time you run `rs_install`. Enter `y[es]` or `n[o]`.
- 4 The `rs_install` utility has an extensive online help system. To access the help system, enter `?` at anytime during the installation process.



```
RS Install          Rational Software Corporation          Version: 2.83

-----
                          Using RS Install

You are running the rs_install command as shana.

Output from rs_install will be copied to:
/tmp/rs_install.polly.shana.log
The -help option can be used to display other rs_install command line
options. All of your inputs will be saved for future runs of rs_install.

You can enter a q, q! or ? at any prompt:
q  Will save your inputs and quit rs_install.
q! Quit rs_install without saving your inputs.
?  Get help on the current prompt.

Press the Enter key to continue, q to quit rs_install:
```

- 5 You can enter q, q!, or ?, at any time during the installation process. Hit Enter to continue with the installation process.
- 6 The Enter Install Location screen will be displayed. From here you will be asked to define the location of your Rational directory.

```

Rational ClearQuest for UNIX - Enter Install Location

Enter the location to install Rational products.
This will be referred to as the 'Rational' directory.
In 'Rational' directory, rs_install will create a releases
directory to keep all of the products by name and version.

For example, in 'Rational'/releases, this install will
create a 'ClearQuest.2001R.04.00' directory to install
Rational ClearQuest for UNIX 2001R.04.00.

The 'Rational' directory must be accessible from
every machine where you plan to run these Rational products.
The 'Rational' directory path must be identical on each machine.
Thus, an automount path like /tmp_mnt/rational should not be used
because you cannot access this directory from every machine.

Checking for 'Rational' directories...3 found.

Press the Enter key to continue, q to quit rs_install:

```

- 7 This directory must be accessible from all the UNIX client machines. The script will locate earlier directories. Hit Enter to display the locations.

Default Setting →

```

Enter a 'Rational' directory from the list below.

0) A new 'Rational' directory.
1) /rambu/releases/rational_shana_sol
2) /people/shana/rational
3) /files/a

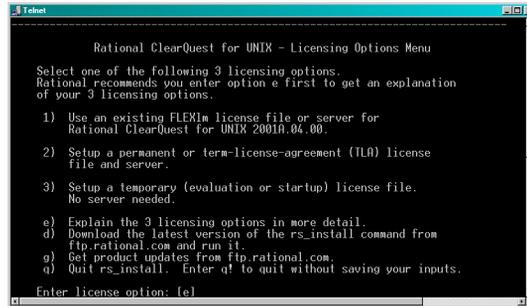
q) Quit rs_install. Enter q! to quit without saving your inputs.
help.

Enter 1,2,3, directory or q: {1}

```

- 8 The default option for installation is identified by an arrow. To select the default setting, hit Enter. If you want to install in a new location type 0 and hit Enter.
- 9 Select e to get a description of the three types of licensing options available for ClearQuest from the Licensing Options Menu agreement. The available options are:
  - use an existing Flexlm license,
  - set up a new permanent license server, or

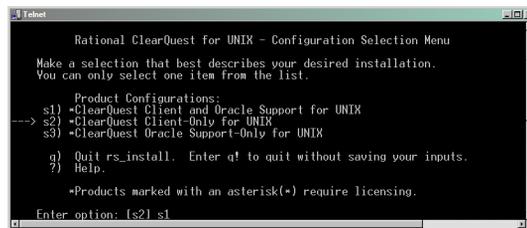
- set up a temporary license server.



- 10 Select the appropriate option and hit Enter. For this scenario the option 1) was selected.

**Note:** If you elected to setup a new license, the script will ask you for a directory location.

- 11 Select which parts of the UNIX installation to install from the Configuration Selection Menu. If this is a new installation, select option s1).



**Note:** If you are not using Oracle as ClearQuest UNIX database vendor, you do not have to install the Oracle Support module. If this is the case, select option s2).

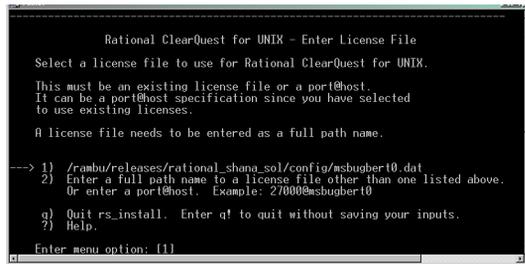
**Note:** If you are using an Oracle database for the ClearQuest schema repository and user databases, you will need to install the Oracle Support module. This module includes the OpenLink Request Broker application. See "Installing OpenLink Request Broker with Oracle" on page 80.

- 12** Select a License file to use from the next screen. Enter the port@hostname name. For example,

27000@server

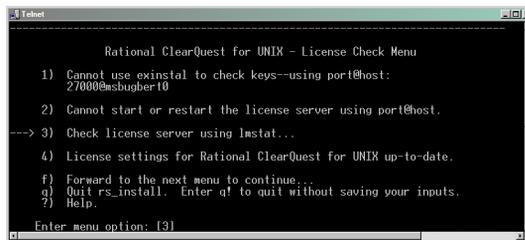
where “port” is 27000 and “host” is the name of the Windows license server.

The “host” name needs to be a permanent name; if your network uses DHCP, you may need a variation or special form of the host name. Check with your network administrator.



```
Rational ClearQuest for UNIX - Enter License File
Select a license file to use for Rational ClearQuest for UNIX.
This must be an existing license file or a port@host.
It can be a port@host specification since you have selected
to use existing licenses.
A license file needs to be entered as a full path name.
---> 1) /rambu/releases/rational_shana_sol/config/msbugbert0.dat
2) Enter a full path name to a license file other than one listed above.
   Or enter a port@host. Example: 27000@msbugbert0
q) Quit rs_install. Enter q! to quit without saving your inputs.
?) Help.
Enter menu option: [1]
```

- 13** Optionally, you can choose to test the license server at this time. Select option 3) to test the license server. This step may install a small part of the UNIX license server software in order to perform the check. If the check fails, you may still proceed with the installation, but you will have to repeat the licensing setup at a later time.



```
Rational ClearQuest for UNIX - License Check Menu
1) Cannot use exinstall to check keys--using port@host:
   27000@msbugbert0
2) Cannot start or restart the license server using port@host.
---> 3) Check license server using lmsstat...
4) License settings for Rational ClearQuest for UNIX up-to-date.
f) Forward to the next menu to continue...
q) Quit rs_install. Enter q! to quit without saving your inputs.
?) Help.
Enter menu option: [3]
```

- 14** The status will be reported to your screen, hit Enter to continue, and Enter again to forward the menu.

- 15** A list of the modules and products that will be installed with the default installation will be displayed on your screen in the Product

Customization Menu. To omit installation for a product, enter the number (or sequence of numbers) to the left of the product description. Example: if you already have Adobe Acrobat and Netscape 4.7, you can omit the additional installation by entering 3-4, and hitting Enter.

```

ClearQuest Client/Server - Product Customization Menu
-----
Install?  Size (KB)  ClearQuest Client/Server 2001A.04.00
1)       yes       57355  + ClearQuest Client 2001A.04.00
2)       yes       7477   + ClearQuest Oracle Support 2001A.04.00
3)       yes       14861  + Netscape 4.7
4)       yes       29653  + Adobe Acrobat 4.0
-----
full     109346  Total
                               + This product is licensed.
                               + License not needed.

--> f) Forward to the next menu to continue.
q) Quit rs_install. Enter q! to quit without saving your inputs.
?) Help.

Enter a product number (1-4) or range to (de)select.
Enter menu option: [f]

```

The product list will be displayed with the modifications you entered. For the example the items 3 and 4 would have a “no” in the first column to the right and no space requirements would be displayed. Hit Enter to continue.

**Note:** Installing Adobe Acrobat and Netscape 4.7 are optional, however:

- Acrobat is useful for reading ClearQuest pdf files provided in the \$CQ\_HOME/books directory.
- ClearQuest UNIX help system requires Netscape 4.7 or higher.

- 16 Select the mode option in the Install Mode menu. Available options are:
  - 1) ask
  - 2) skip
  - 3) reinstall
- 17 Select f) Forward to start the install process.
- 18 When the installation finishes, the Database Registry Menu will ask you to enter the location of where to store the registry information regarding the schema repository.

**Note:** This directory must be readable by all machines and users that will run this installation of ClearQuest. It must also be writable by the user who will be the ClearQuest administrator.

## Configuring database connectivity

If your ClearQuest installation will include ClearQuest UNIX clients, your vendor database can be either MS SQL, Oracle, or DB2.

You will have to establish the connectivity between your database vendor and your UNIX end users. The way you do this is dependent on which database vendor you have used to create your ClearQuest databases.

- If you are using Microsoft SQL Server or Oracle databases the OpenLink Request Broker is used as the agent. The OpenLink Request Broker application is provided with the ClearQuest UNIX installation CD. See “Installing OpenLink Request Broker with Microsoft SQL Server” on page 78, and “Installing OpenLink Request Broker with Oracle” on page 80.
- If you are using DB2, use the DB2 command line administrator tool to establish connectivity. See “Configuring DB2 databases for ClearQuest UNIX” on page 86.

Depending on which database vendor product you are using, proceed to the following sections:

- “Installing OpenLink Request Broker with Microsoft SQL Server” on page 78.
- “Installing OpenLink Request Broker with Oracle” on page 80.
- “Configuring DB2 databases for ClearQuest UNIX” on page 86.

### Installing OpenLink Request Broker with Microsoft SQL Server

To enable Microsoft SQL Server databases to run on a Windows machine as a back-end database, you will need to install the OpenLink Request Broker on the SQL Server machine. The

OpenLink Request Broker software is provided on the ClearQuest UNIX Installation CD.

- 1 Insert the ClearQuest UNIX CD into the Windows SQL Server database server machine.

- 2 Create a directory location for the OpenLink Request Broker software. A typical location would be:

```
C:\Program Files\OpenLink
```

**Note:** The new OpenLink Request directory needs to have approximately 16 MB of free disk space.

- 3 Copy the `opl.zip` file from the `oplrqb` subdirectory on the ClearQuest installation CD into the new directory.

**Warning:** Make sure you place this zip file into the OpenLink Request Broker installation directory. Do NOT copy this file to a temporary directory.

- 4 Unzip `opl.zip` into the new directory and execute the following at the command line:

```
cqperl oplrqb.pl
```

- 5 The perl script will prompt you for the directory where you unzipped the `opl.zip` file. Type in the directory path and select Enter. The request broker will be installed and the `oplrqb` service will be registered. No other server configuration is necessary.

- 6 Connect to it from the UNIX client as you would the Windows client. The following information is required to successfully connect.

**Note:** The Windows Server host name that you enter must be accessible from all UNIX clients. When in doubt, use the ping command to verify connectivity.

- Vendor: SQLSERVER
- Server: <Server hostname>
- Database: <Database name for Master Schema Repository>

- User Name: <SQL Server User Name created for Master Schema Repository>
- Password: <SQL Server Password created for Master Schema Repository>

## Installing OpenLink Request Broker with Oracle

After setting up your database server, see “Configuring vendor databases” on page 9, you must also install OpenLink Request Broker to facilitate database connections. For instruction on installing the OpenLink Request Broker software see Step 11 on page 75.

- 1 Log into the Oracle server as the same user ID you will use when installing ClearQuest.
- 2 Change to the `openlink_server` directory in the Rational root directory that was created when you installed the ClearQuest components.

```
cd [Rational_dir]/releases/ClearQuestOracleSupport.[version]/openlink_server/[arch]
```

where:

`Rational_dir`

Rational installation directory.

`version`

Rational installation version number. Example: 2001A.04.00

`arch`

Hardware system. Use the one of the following options depending on your system:

- `hp11_pa`
- `sun5`
- `aix`
- `linux`

- 3 Run the installation script by entering the following at the command line:

```
sh install.sh
```

- 4** The script will prompt you for the installation information, accept defaults values when they are available.
- 5** After the installation process is complete the script will launch the configuration utility. In the first window select:
  - 1) Request Broker and enter the requested information.
- 6** In the next window select:
  - 9) for Oracle 7 and enter the path name of the Oracle home directory and the SID to be used
  - or -
  - 10) for Oracle 8 and enter the path name of the Oracle home directory and the SID to be used.
- 7** In the next window select:
  - S) Startup Request Broker.
- 8** The configuration process is complete. Type `Quit` to close the OpenLink Configuration Utility.

### ***Installing the OpenLink ODBC catalog views for Oracle 7 or Oracle 8***

This task is done while connected to the internal database. Run the Oracle `svrmgr1` with the corresponding sql script, and use `odbccat7.sql` for Oracle 7 or `odbccat8.sql` for Oracle 8. The scripts are located in the newly created bin directory.

- 1** Log in as the Oracle database administrator.
- 2** Change to the directory containing the `odbccat7.sql` or `odbccat8.sql` script:

```
cd [Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/[arch]/bin
```

where

```
Rational_dir
```

Rational installation directory.

version

Rational installation version number. Example: 2001A.04.00

arch

Hardware system. Use the one of the following options depending on your system:

- hp11\_pa
- sun5
- aix
- linux

### 3 Enter the following:

letter "l" not number "1" →	> svrmgrl lmode=y
	SVRMGR> CONNECT internal
If you are using Oracle7 →	SVRMGR> @odbccat7.sql
	--or--
If you are using Oracle8 →	SVRMGR> @odbccat8.sql
	SVRMGR> EXIT

For more information, see the comments in the `odbccat*.sql` file.

After installing the OPENLink Request Broker for Oracle, you will want to make it automatically startup at boot time. See:

- “Automating startup on reboot for Solaris” on page 82
- “Automating startup on reboot for HP-UX” on page 84
- “Automating startup on reboot for Linux” on page 85
- “Automating startup on reboot for AIX” on page 86

#### ***Automating startup on reboot for Solaris***

The following instructions assume your UNIX installation uses the typical directories for startup and shutdown scripts.

To automatically restart the OpenLink Request Broker after rebooting the server:

- 1 Log in as root (root privileges are required for this step).**
- 2 After installing the cd-image, there will be a file named `rc.OpenLinkBroker` in:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/sun5
```

**where:**

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 3 Copy the `rc.OpenLinkBroker` script to the `/etc/init.d` directory.**  

```
cp rc.OpenLinkBroker /etc/init.d/openlinkbroker
```
- 4 Edit the `/etc/init.d/openlinkbroker` script to change the value of `BIN_DIR` to be:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/sun5/bin
```

**where:**

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 5 Make the script executable:**  

```
chmod +x /etc/init.d/openlinkbroker
```
- 6 Make symbolic links for startup and shutdown as follows. Note that the example uses “98” for startup and “02” for shutdown. You may need to use different numbers so that the startup script is invoked after any Oracle and NFS start up scripts.**

```
>ln -s /etc/init.d/openlinkbroker /etc/rc2.d/S98openlinkbroker
```

```
>ln -s /etc/init.d/openlinkbroker /etc/rc2.d/K02openlinkbroker
```

## ***Automating startup on reboot for HP-UX***

- 1 Log in as root (root privileges are required for this step).**
- 2 After installing the cd-image, there will be a file named `rc.OpenLinkBroker` in:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/hp11_pa
```

**where:**

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 3 Copy the `rc.OpenLinkBroker` script to the `/sbin/init.d/` directory.**

```
cp rc.OpenLinkBroker /sbin/init.d/openlinkbroker
```

- 4 Edit the `/sbin/init.d/openlinkbroker` script to change the value of `BIN_DIR` to be:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/hp11_pa/bin
```

**where:**

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 5 Make the script executable:**

```
chmod +x /sbin/init.d/openlinkbroker
```

- 6 Make symbolic links for startup and shutdown as follows. Note that the example uses “98” for startup and “02” for shutdown. You may need to use different numbers so that the startup script is invoked after any Oracle and NFS start up scripts.**

```
>ln -s /sbin/init.d/openlinkbroker /sbin/rc2.d/S98openlinkbroker
```

```
>ln -s /sbin/init.d/openlinkbroker /sbin/rc2.d/K02openlinkbroker
```

## ***Automating startup on reboot for Linux***

- 1 Log in as root (root privileges are required for this step).**
- 2 After installing the cd-image, there will be a file named `rc.OpenLinkBroker` in:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/linux
```

**where:**

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 3 Copy the `rc.OpenLinkBroker` script to the `/etc/rc.d/init.d` directory.**

```
cp rc.OpenLinkBroker /etc/rc.d/init.d/openlinkbroker
```

- 4 Edit the `/etc/rc.d/init.d/openlinkbroker` script to change the value of `BIN_DIR` to be:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/linux/bin
```

**where:**

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 5 Make the script executable:**

```
chmod +x /etc/rc.d/init.d/openlinkbroker
```

- 6 Make symbolic links for startup and shutdown as follows. Note that the example uses “98” for startup and “02” for shutdown. You may need to use different numbers so that the startup script is invoked after any Oracle and NFS start up scripts.**

```
>ln -s /etc/rc.d/init.d/openlinkbroker /etc/rc.d/rc3.d/S98openlinkbroker
```

```
>ln -s /etc/rc.d/init.d/openlinkbroker /etc/rc.d/rc3.d/K02openlinkbroker
```

### ***Automating startup on reboot for AIX***

- 1 Log in as root (root privileges are typically required for this step).**
- 2 After installing the cd-image, there will be a file named `rc.OpenLinkBroker` in:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/aix
```

where:

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 3 Copy the `rc.OpenLinkBroker` script to the `/etc` directory.**

```
cp rc.OpenLinkBroker /etc/rc.openlinkbroker
```

- 4 Edit the `/etc/rc.openlinkbroker` script to change the value of `BIN_DIR` to be:**

```
[Rational_dir]/releases/ClearQuestSupport.[version]/openlink_server/aix/bin
```

where:

```
Rational_dir
```

**Rational installation directory.**

```
version
```

**Rational installation version number. Example: 2001A.04.00**

- 5 Make the script executable:**

```
chmod +x /etc/rc.openlinkbroker
```

- 6 Edit `/etc/inittab` and add the line:**

```
openlinkbroker:2:wait:/etc/rc.openlinkbroker
```

### **Configuring DB2 databases for ClearQuest UNIX**

Once the DB2 client software is installed on the ClearQuest UNIX client machine, perform the following steps:

- 1** Log into the ClearQuest UNIX client machine as a user with privileges to modify the database instance (perhaps the UNIX user that created the DB2 instance).
- 2** Ensure that the `DB2INSTANCE` environment variable is set to the correct DB2 instance. This is very important. The IBM DB2 ODBC driver requires that this environment variable be set for all operations. ClearQuest UNIX will not operate properly with DB2 if the `DB2INSTANCE` environment variable is not set. A typical symptom of the `DB2INSTANCE` environment variable not being set is that the IBM DB2 ODBC driver will cause a Segmentation Fault after attempting to login to the DB2 database.
- 3** Run the DB2 command line administration tool:  
`db2`
- 4** Create a DB2 TCP/IP NODE for use by ClearQuest UNIX. The node alias needs to be the same for all DB2 clients. The port number is the TCP/IP port used by the DB2 service. This is typically set to 51164.  
`db2> CATALOG TCPIP NODE <nodealias> REMOTE  
<serverhostname> SERVER <port number>`
- 5** Create a DB2 database alias for both the Master Schema Repository and a User database. The database alias needs to be the same for all DB2 clients.  
`db2> CATALOG DATABASE <database name> AS <database alias>  
AT NODE <node alias>`
- 6** Test the connection to the DB2 database. The `CONNECT` command should succeed.  
`db2> CONNECT TO <database alias> USER <Windows user id>  
USING <Windows password>  
db2> DISCONNECT CURRENT  
db2> QUIT`
- 7** Create a symbolic link from the ClearQuest install area into the IBM DB2 installation area for the IBM DB2 ODBC device driver. This is required because ClearQuest UNIX does not redistribute the IBM DB2 device driver. A typical symptom of this step being omitted is that ClearQuest UNIX will indicate that the specified driver could not be loaded while attempting to logon to the DB2

database. This step needs to be completed for every ClearQuest UNIX install area that will access DB2.

```
cd <rational
directory>/releases/ClearQuestClient.2001.03.00
cd <architecture >/shlib
ln -fs <IBM DB2 Install Dir>/V6.1/lib/libdb2.so db_IBMDB2
```

**8** Launch ClearQuest UNIX and configure the connection as follows:

- Vendor: DB2
- Server: <server host name>
- Database: <database alias for Master Schema Repository>
- User Name: <Windows user id>
- Password: <Windows password>

**9** Repeat steps 1 - 8 for each schema repository and user database.

## Configuring ClearQuest UNIX

You should tell ClearQuest UNIX client users where ClearQuest is installed. They can then run ClearQuest directly, or source a configuration file that will modify their path.

To run ClearQuest UNIX,

- 1 Add the ClearQuest home directory to the client machines' path:

```
[Rational_dir]/releases/ClearQuestClient.2001A.04.00/bin
```

or use the `source` command on the `cq_setup.csh` file to set the ClearQuest home environment variable (`$CQ_HOME`):

```
source [Rational_dir]/cq_setup.csh
```

or

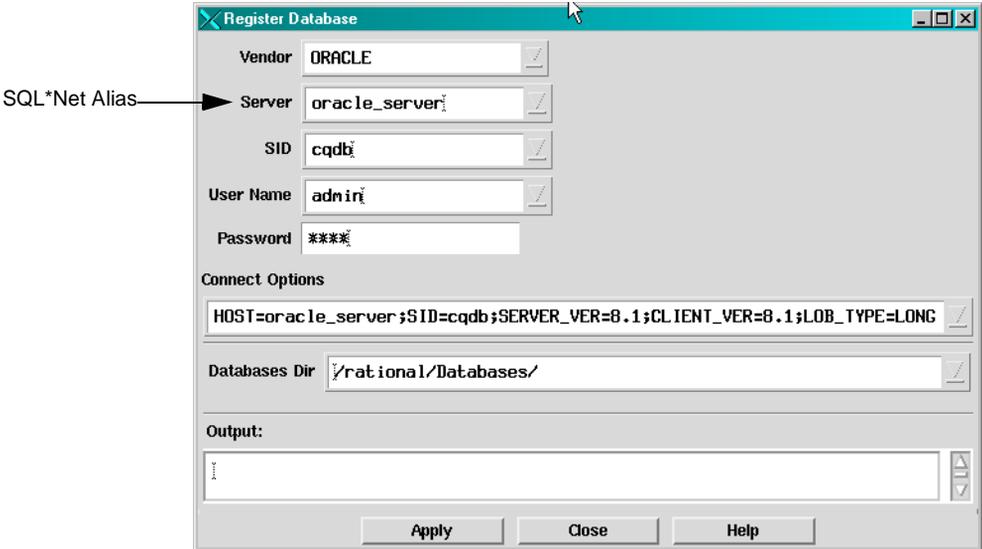
```
source [Rational_dir]/cq_setup.sh
```

- 2 To run ClearQuest UNIX, type `clearquest`.
- 3 The first time you run the ClearQuest/UNIX client, the Register Database dialog displays. Enter the information to connect to the schema repository. Refer to the following table for examples of database connection data.

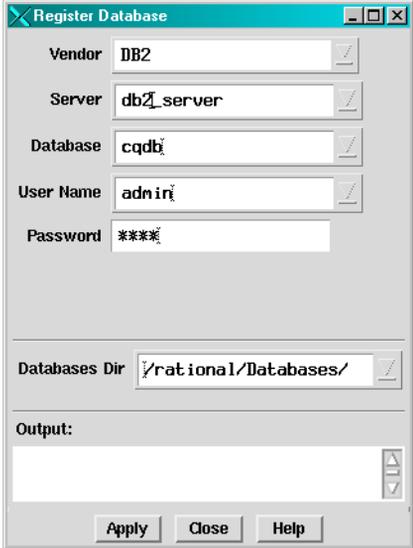
Parameter	SQL Server	Oracle	DB2
Vendor	SQLSERVER	ORACLE	DB2
Server	host name	SQL*Net alias	host name
Database	schema repository database name	Not Required	schema repository database alias
SID	Not Required	Instance ID for the Oracle database server. This is case sensitive.	Not Required
User Name	user name	user name	user name
Password	password	password	password

Parameter	SQL Server	Oracle	DB2
Connect Options	Not Required	HOST=host SID= sid SERVER_VER=8.0 CLIENT_VER=7.0	Not Required

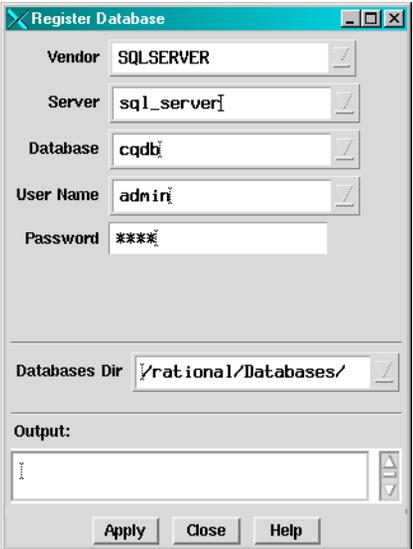
Example screen for an Oracle database:



Example screen for a DB2 database:



Example screen for an SQL Server database:



4 Click Apply and the Close.

## Enabling E-mail notification for UNIX end users

After installing ClearQuest (either for an initial or an upgrade install), users must enable e-mail notification if they want to send automatic e-mail messages from ClearQuest. To do this:

- 1 Launch ClearQuest. Type `clearquest` at a UNIX shell prompt.
- 2 Within ClearQuest, choose **View > E-mail Options**. This opens the E-mail Setup dialog.
- 3 Select **Enable E-mail Notification**.
- 4 Enter your e-mail address.
- 5 Click **OK**.

# 7

## Installing and Configuring ClearQuest Web

This chapter describes how to set up the ClearQuest Web server for both Microsoft Internet Information Server version 4 (IIS 4) for Windows NT, and Windows 2000 Server, which includes Microsoft Internet Information Server version 5 (IIS 5).

This chapter covers the following topics:

- “Understanding the installation process” on page 94.
- “Setting up ClearQuest Web for IIS 4” on page 97.
- “Setting Up ClearQuest Web for IIS 5” on page 108.
- “Enabling E-mail notification for web end users” on page 121.
- “Accessing ClearQuest Web” on page 123.

## Understanding the installation process

**Note:** If you are using Oracle 8.0.x and 8.1.x clients, you must have the latest patching installed to operate successfully with ClearQuest Web. For more information, see your latest ClearQuest release notes located at:

- For Windows: <d>:\ClearQuest\clearquest\_readme.htm  
(where <d> is your CD-ROM drive)
- For UNIX:  
<d>:/products/ClearQuestClient/clearquest\_readme.htm  
(where <d> is your CD-ROM drive)

The following are special considerations for using ClearQuest Web:

- ClearQuest Web does not support Microsoft Access databases.
- Your browser must have cookies enabled when using ClearQuest Web.
- Make sure your web server is set to display 256 colors. This is necessary for generating charts.
- You must have first set up the vendor database that ClearQuest will use. See “Configuring vendor databases” on page 9.

To install and configure ClearQuest Web on your Windows server, you must complete the following tasks:

- 1 Verify that you have either IIS 4.0 or 5.0 installed on your web server machine.
  - Install ClearQuest on the Web server. See, “Installing and configuring ClearQuest for an administrator” on page 39. Make sure you select a Custom installation and expand Web Server Components and check Rational ClearQuest Web.

**Note:** We recommend, for improved performance, security, and reliability, that the Web server machine and the database server machine be two different machines, each with its software installed onto an NTFS partition.

- 2** Configure Microsoft Internet Information Server to serve the ClearQuest Web pages. See “Setting up ClearQuest Web for IIS 4” on page 97 or “Setting Up ClearQuest Web for IIS 5” on page 108.
- 3** Configure the web server so that web clients can take advantage of ClearQuest’s e-mail notification feature. See “Enabling E-mail notification for web end users” on page 121.
- 4** Provide users with the path to ClearQuest Web. See “Accessing ClearQuest Web” on page 123.

## Installing ClearQuest

To install ClearQuest Web:

- 1 Load the ClearQuest CD-ROM on the machine you want to administer ClearQuest.
- 2 If the setup program does not run automatically, navigate to the top level directory of the CD-ROM and double-click `setup.exe`.
- 3 Click the button **Configure License** and enter your ClearQuest and if applicable, your ClearQuest MultiSite license information. Follow the instructions on your License Certificate and in the online Help for the License Key Administrator.

**Note:** Rational ClearQuest uses a license server. If you don't already have a license server installed, it is available on the Rational Solutions for Windows CD. For more information, see *Administering Licenses for Rational Suite*, available on the Rational Solutions for Windows Online Documentation CD.

- 4 To install ClearQuest Web select the Custom install option, expand the Web Server Components and check Rational ClearQuest Web.

The Rational Software Setup wizard prompts you through the ClearQuest Web installation.

## Setting up ClearQuest Web for IIS 4

This section is for users using Windows NT (Workstation or Server) with IIS 4. If you are using a Windows 2000 Server, which has IIS 5 as an embedded component, see “Setting Up ClearQuest Web for IIS 5” on page 108.

This section contains the following:

- “Setting up an anonymous user account for IIS 4” on page 97
- “Creating a cache directory for IIS 4” on page 100
- “Configuring IIS 4.0 to serve ClearQuest Web pages” on page 100

### Setting up an anonymous user account for IIS 4

Create an anonymous user account for IIS to use when it serves the ClearQuest pages. If you are using an SQL Server database, the anonymous user account should be known in the domain that contains the ClearQuest database, and should have full access to that database.

#### *Create the anonymous user account*

Create the anonymous user account as follows:

- 1 Log on as a Windows NT administrator.
- 2 If the web server belongs to a Windows NT domain, ask your Windows NT system administrator to create a domain user and provide you with the user name and password. (If not, go to Step 4.)
- 3 Run the User Manager (Start > Programs > Administrative Tools > User Manager), select Policies > User Rights, select the Show Advanced Rights checkbox, and give this user the following privileges on the Web server:
  - Access this computer from network
  - Log on locally
  - Log on as a service

Also provide access to any other resources used by your hook scripts such as mail accounts or auxiliary databases. Skip to Step 6.

- 4 If the web server operates in stand-alone mode (does not belong to a Windows NT domain), use the default anonymous account created by the IIS installation (IUSR\_<machine\_name>) for Step 5.
- 5 Run the User Manager (Start > Programs > Administrative Tools > User Manager), select Policies > User Rights, select the Show Advanced Rights checkbox, and give the IUSR\_<machine\_name> account the following privileges:
  - Access this computer from network
  - Log on locally
  - Log on as a service

Also provide access to any other resources used by your hook scripts such as mail accounts or auxiliary databases.

- 6 Verify that the anonymous user account has a specific, known password (you will need it later). Make sure there are no password policies in effect such as “User must change password at next login,” because these prevent the anonymous user account from functioning properly.

### ***Set up the registry key access privileges***

Give the anonymous user account full access privileges to the HKEY\_LOCAL\_MACHINE\Software\Rational Software\ClearQuest registry key as follows.

- 1 Select Run from the Start menu and type REGEDT32 to run the REGEDT32 program.
- 2 In the HKEY\_LOCAL\_MACHINE MDI window, select Software\Rational Software\ClearQuest.
- 3 On the Registry Editor menu bar, select Security > Permissions.
- 4 In the Registry Key Permissions dialog box, select the anonymous user. For the type of access, select Full Control. Select Replace Permission

on Existing Subkeys so that the anonymous user can update the entire registry tree below ClearQuest.

- 5 In the HKEY\_USERS MDI window, select .Default\Software\Rational Software\ClearQuest.
- 6 On the Registry Editor menu bar, select Security > Permissions.
- 7 In the Registry Key Permissions dialog box, select the anonymous user. For the type of access, select Full Control. Select Replace Permission on Existing Subkeys so that the anonymous user can update the entire registry tree below ClearQuest.
- 8 Close the REGEDT32 program.

### ***Set up read access permission***

Give the anonymous user account read access permission to the directory tree containing the ClearQuest web files (this is the www directory in the ClearQuest installation area).

**Note:** If you installed ClearQuest onto a FAT partition instead of an NTFS partition, you will not see a Security tab and can skip this section.

- 1 Use the Windows Explorer to locate the directory in which you installed ClearQuest. Right-click the www directory and select Properties from the shortcut menu.
- 2 On the Properties dialog box, click the Security tab. Click Permissions and select Replace Permissions on Subdirectories.
- 3 On the Directory Permissions dialog box, click Add.
- 4 Select the anonymous user account.
  - If you chose the default local anonymous username in Step 2, set List Names From to the name of the local machine, click Show Users below the Names list, then select the IUSR\_machinename account from the Names list.
  - If you are using a domain account, select that domain in the List Names From field, click Show Users, and select the domain account from the Names list.

- 5 Click Add.
- 6 Set Type of Access to Read.
- 7 Click OK to close the Add Users and Groups dialog box.
- 8 Click OK to close the Directory Permissions dialog box.
- 9 Click OK to close the WWW Properties dialog box.

### **Creating a cache directory for IIS 4**

Create a cache directory in the ClearQuest Web directory hierarchy:

- 1 At the top of the web directory tree, there should be a directory called `cache`. If a `cache` directory does not exist, create one under the ClearQuest WWW directory. For example:  

```
c:\Program Files\Rational\ClearQuest\WWW\cache
```
- 2 Give the anonymous user full access to everything in this directory tree.

### **Configuring IIS 4.0 to serve ClearQuest Web pages**

This section describes how to configure the IIS 4.0 web server to serve ClearQuest Web pages.

- “Create a virtual directory for IIS 4” on page 101
- “Edit the properties of the virtual directory for IIS 4” on page 103
- “Edit the properties of the cache directory for IIS 4” on page 107
- “Edit the properties of the images directory for IIS 4” on page 107
- “Restart the web server for IIS 4” on page 107

**Note:** If the Internet Service Manager is not available, you must install the Windows NT 4.0 Option Pack. When installing the Option pack, be sure to explicitly select the Internet Service Manager.

## Create a virtual directory for IIS 4

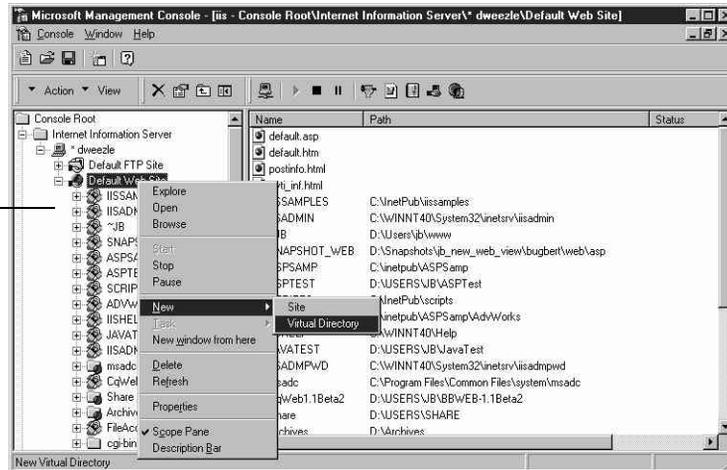
The first step in setting up IIS 4.0 is to create a virtual directory for the web. To create this directory, you use the Internet Service Manager program (Microsoft Management Console) that comes with IIS 4.0.

- 1 Start the Microsoft Management Console program (Internet Service Manager).

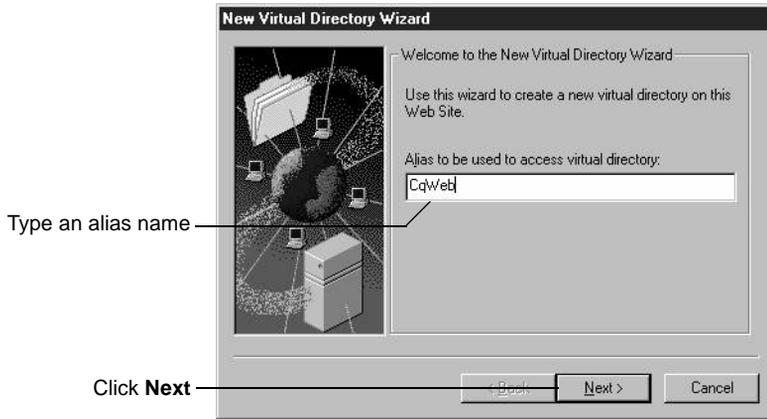
Start > Programs > Windows NT 4.0 Option Pack > Microsoft Internet Information Server > Internet Service Manager

- 2 In the Navigator window, right-click Default Web Site, then click New > Virtual Directory from the shortcut menu.

In the Navigator window,  
right-click Default Web  
Site.

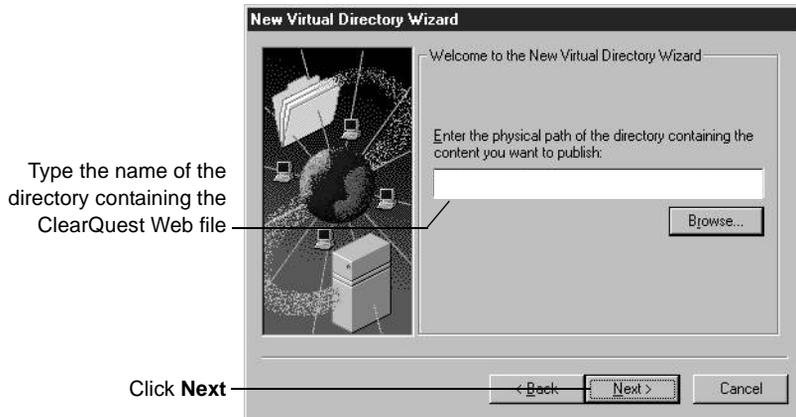


- 3** In the New Virtual Directory Wizard, type an alias name, such as CqWeb. Do not use a “/” character in the alias name.

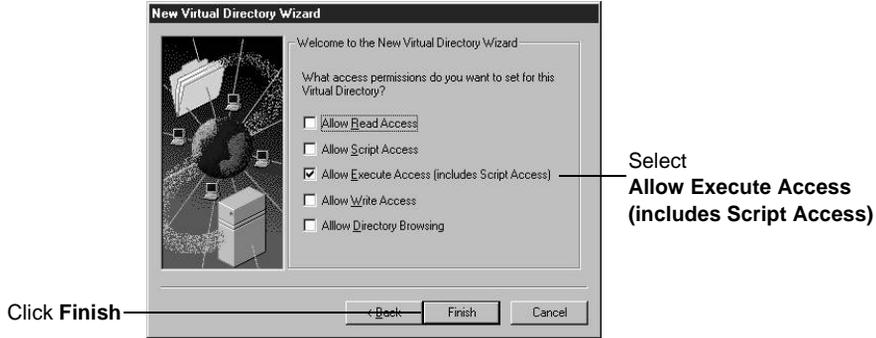


- 4** Type or browse to the name of the directory containing the ClearQuest Web files. These files are located in the WWW subdirectory of the ClearQuest installation directory. For example:

C:\Program Files\Rational\ClearQuest\WWW



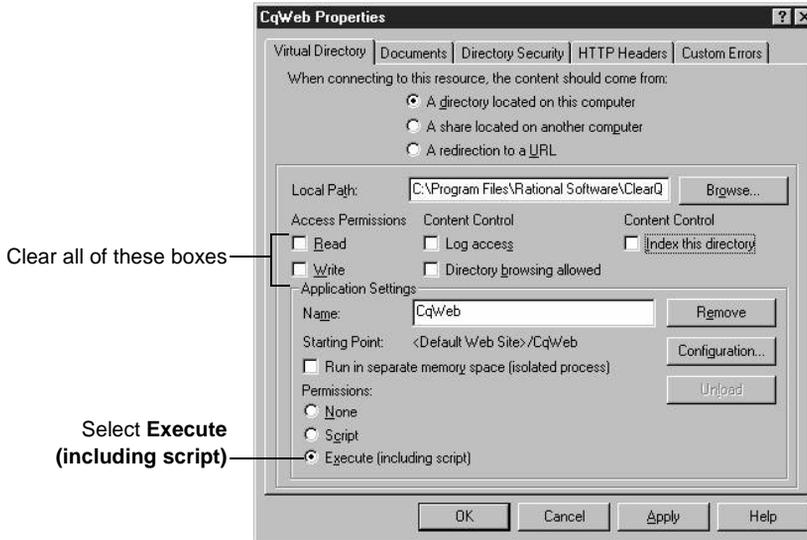
5 Select the default permissions for the virtual directory:



**Edit the properties of the virtual directory for IIS 4**

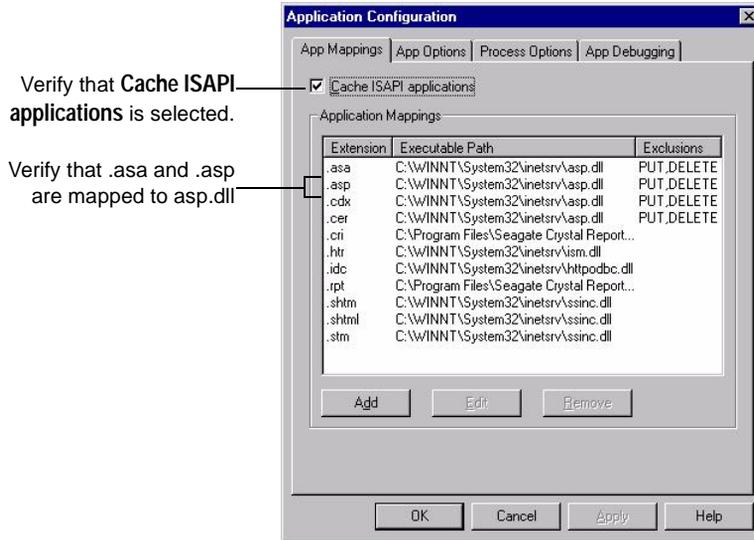
Edit the properties of the virtual directory as follows:

- 1 In the Microsoft Management Console left pane, navigate to the virtual directory you created earlier.
- 2 Right-click on the virtual directory and select Properties from the shortcut menu.
- 3 In the Properties dialog box, click the Virtual Directory tab.

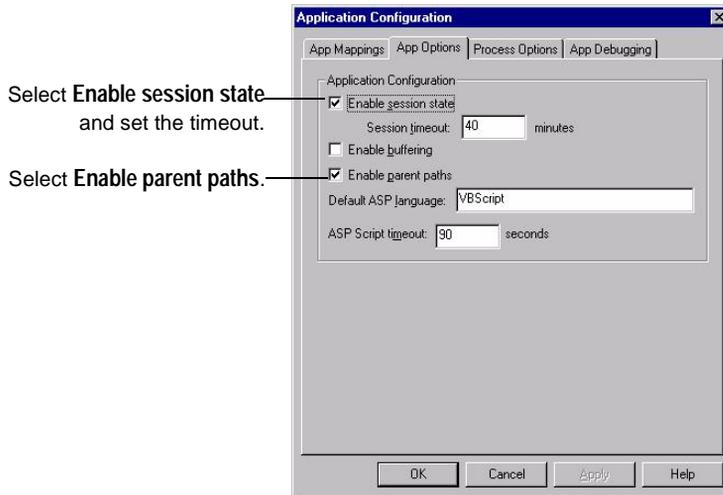


**Note:** You should *not* run ClearQuest Web in a separate memory space (as an isolated process). If you do so, e-mail rules will not work. If you need to run ClearQuest Web in a separate memory space, see the *ClearQuest Release Notes* (\\ClearQuest\readme.htm) for more information.

- 4 In the same Properties dialog box, click Configuration. In the Application Configuration dialog, click the App Mappings tab.



- 5 In the same Application Configuration dialog box, click the App Options tab.



Select **Enable session state** and set the timeout.

Select **Enable parent paths**.

- 6 Click OK to return to the Properties dialog box.

- 7 In the Properties dialog box, click the Documents tab.

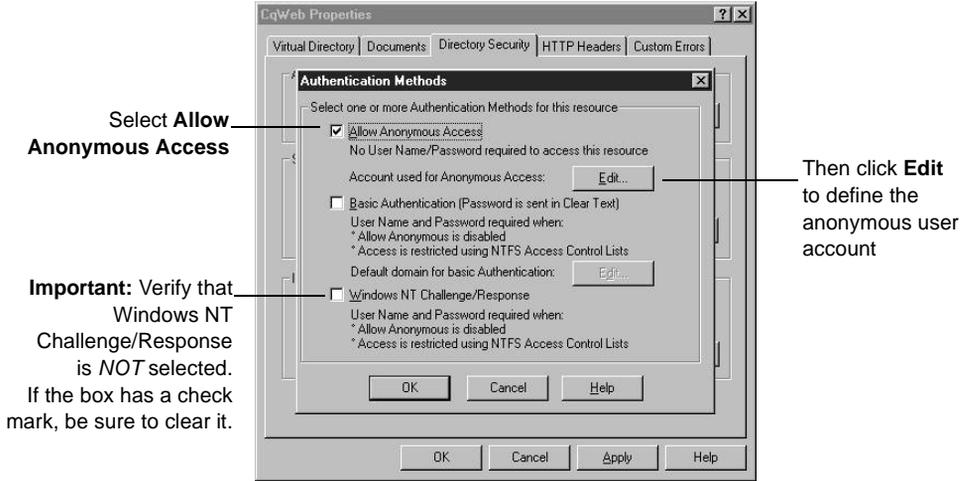
If necessary, add the Default.asp document to the list of documents...

then remove any other documents and select **Default.asp** as the default



Click to add the Default.asp document to the list

- In the same Properties dialog box, click the Directory Security tab. In the Anonymous Access and Authentication Control, click Edit to open the Authentication Methods dialog box.



- Define the anonymous user account:



**Note:** ClearQuest Web does *not* work if Enable Automatic Password Synchronization is selected.

- Click OK.
- Type the password in the Confirm Password dialog box and click OK.
- Click OK again to close the Properties dialog.

### ***Edit the properties of the cache directory for IIS 4***

Edit the properties of the cache subdirectory as follows:

- 1 In the Microsoft Management Console left pane, navigate to the cache directory under the virtual directory name.
- 2 Right-click the cache directory.
- 3 Click Properties from the shortcut menu.
- 4 In the Properties dialog box, click the Directory tab.
- 5 For Access Permissions, select only Read. Verify that no other options are selected.
- 6 For Permissions, select None.
- 7 Click OK.

### ***Edit the properties of the images directory for IIS 4***

Edit the properties of the images subdirectory as follows:

- 1 In the Navigator window of the Microsoft Management Console, expand the directory tree of the Default Web Site until you locate the images directory under your alias name.
- 2 Right-click the images directory.
- 3 Click Properties from the shortcut menu.
- 4 In the Properties dialog box, click the Directory tab.
- 5 For Access Permissions, select only Read. Verify that no other options are selected.
- 6 For Permissions, select None.
- 7 Click OK.

### ***Restart the web server for IIS 4***

Close the Microsoft Management Console, saving your console settings, then restart the web server.

You have completed installing and configuring the ClearQuest web server for IIS 4.

## Setting Up ClearQuest Web for IIS 5

This section describes how to set up the ClearQuest Web server for Windows 2000 Server, which includes Microsoft Internet Information Server version 5 as an embedded component. If you are using Windows NT, see “Setting up ClearQuest Web for IIS 4” on page 97.

This section contains the following:

- “Setting up an anonymous user account for IIS 5” on page 108
- “Creating a cache directory for IIS 5” on page 112
- “Configuring IIS 5 to serve ClearQuest Web pages” on page 113

### Setting up an anonymous user account for IIS 5

Create an anonymous user account for IIS to use when it serves the ClearQuest pages. If you are using an SQL Server database, the anonymous user account should be known in the domain that contains the ClearQuest database, and should have full access to that database.

#### *Create the anonymous user account*

Create the anonymous user account as follows:

- 1 Log on as a Windows 2000 administrator.
- 2 If the web server belongs to a Windows domain, ask your Windows system administrator to create a domain user and provide you with the user name and password. (If not, go to Step 4.)
- 3 For this domain user, click Start > Settings > Control Panel > Administrative Tools > Local Security Policy, select Local Policies > User Rights Assignment. For each of the following double-click to view the Local Security Setting dialog box then use the Add button to grant this user the following privileges on the Web server:
  - Access this computer from network

- Log on as a service
- Log on locally

Also provide access to any other resources used by your hook scripts, such as mail accounts. (Go to Step 6.)

- 4 If the web server operates in stand-alone mode (does not belong to a Windows NT domain), use the default anonymous account created by the IIS installation (IUSR\_<machine\_name>). Click Start > Settings > Control Panel > Administrative Tools > Local Security Policy, select Local Policies > User Rights Assignment, and use the Add button to grant this user the following privileges on the Web server:
  - Access this computer from network
  - Log on as a service
  - Log on locally

Also provide access to any other resources used by your hook scripts, such as mail accounts.

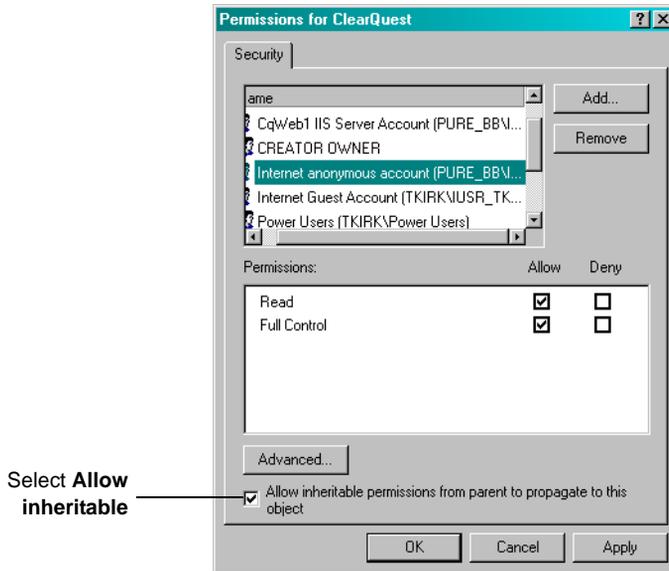
- 5 Verify that the anonymous user account has a specific, known password (you will need it later). Make sure there are no password policies in effect such as “User must change password at next login,” because these prevent the anonymous user account from functioning properly.

### ***Set up registry key access privileges***

Give the anonymous user account full access privileges to the HKEY\_LOCAL\_MACHINE\Software\Rational Software\ClearQuest registry key as follows.

- 1 Select Run from the Start menu and type REGEDT32 to run the REGEDT32 program.
- 2 In the HKEY\_LOCAL\_MACHINE MDI window, select Software\Rational Software\ClearQuest.
- 3 On the Registry Editor menu bar, select Security > Permissions.
- 4 Click Add to add the anonymous user account.
- 5 In the Select Users, Computers, or Groups dialog box,

- If you chose the default local anonymous username, set Look In to the name of the local machine and select the IUSR\_machinename account from the Name list.
  - If you are using a domain account, select that domain in the Look in to name of the domain and select the domain account name from the Name list.
- 6 Click Add, and then click OK to close the Select Users, Computers, or Groups dialog.
  - 7 Highlight new added account, and in the Permissions: area, check the Full Control **“Allow”** box. Click OK.
  - 8 Select Allow inheritable permissions.



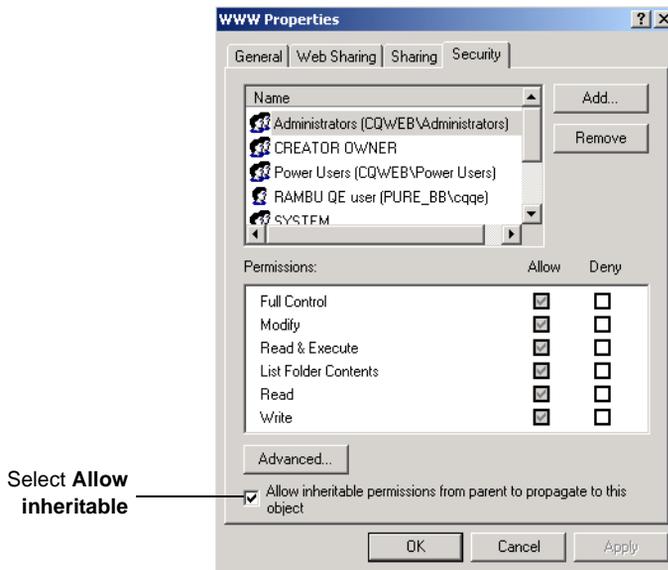
- 9 In the HKEY\_USERS MDI window, select \Default\Software\Rational Software\ClearQuest.
- 10 Repeat Step 3 on page 109 through Step 8 on page 110 for the HKEY\_USERS.
- 11 Close the REGEDT32 program.

### ***Set up read access permission***

Give the anonymous user account read access permission to the directory tree containing the ClearQuest web files (this is the `WWW` directory in the ClearQuest installation area).

**Note:** If you installed ClearQuest onto a FAT partition instead of an NTFS partition, you will not see a Security tab and can skip this section.

- 1 Use the Windows Explorer to locate the directory in which you installed ClearQuest. Right-click the `www` directory and select Properties from the shortcut menu.
- 2 On the Properties dialog box, click the Security tab and select Allow inheritable permissions.



- 3 On the Security tab, click Add.
- 4 Select the anonymous user account.
  - If you chose the default local anonymous username in Step 2, set Look in to the name of the local machine, then select the `IUSR_machinename` account from the Name list.

- If you are using a domain account, select that domain in the Look in field, and select the domain account from the Name list.
- 5 Click Add, then click OK.
  - 6 On the Security tab, in the Permissions section, select the checkbox to allow Read, then click OK.

### Creating a cache directory for IIS 5

Create a cache directory in the ClearQuest Web directory hierarchy.

**Note:** If you installed ClearQuest onto a FAT partition instead of an NTFS partition, you will not see a Security tab and can skip this section.

- 1 At the top of the web directory tree, there should be a directory called `cache`. If a `cache` directory does not exist, create one your ClearQuest WWW directory. For example:

```
c:\Program Files\Rational\ClearQuest\WWW\cache
```

- 2 Right-click the cache directory to see its properties.
- 3 On the Properties dialog box, click the Security tab.
- 4 Select the anonymous user account.
  - If you chose the default local anonymous username in Step 2, set Look in to the name of the local machine, then select the IUSR\_machinename account from the Name list.
  - If you are using a domain account, select that domain in the Look in field, and select the domain account from the Name list.
- 5 Click Add, then click OK.
- 6 In the Permissions section, select the checkbox to allow Full Control, then click OK.

## **Configuring IIS 5 to serve ClearQuest Web pages**

This section describes how to configure the IIS 5 web server to serve ClearQuest Web pages.

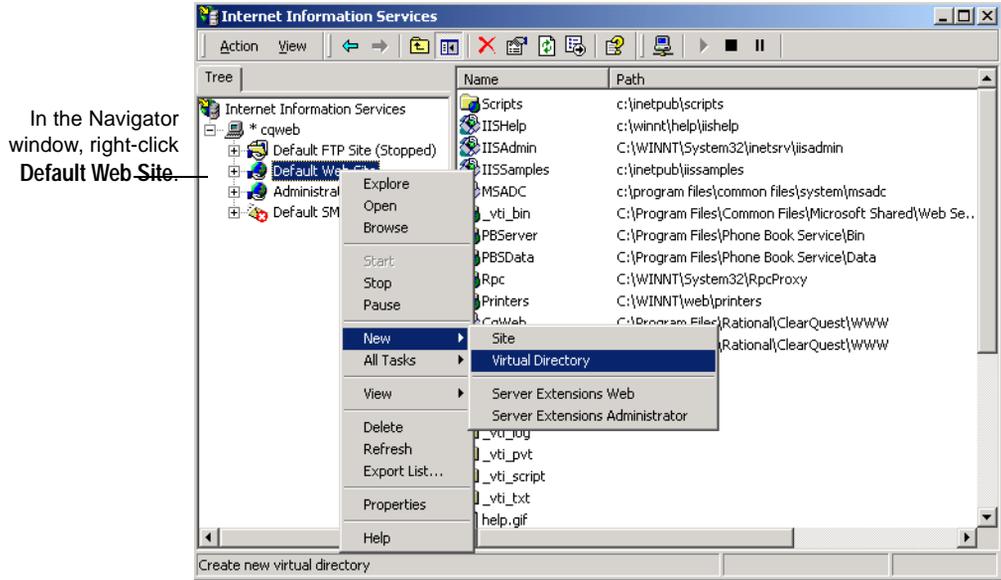
- “Create a virtual directory for IIS 5” on page 113
- “Edit the properties of the virtual directory for IIS 5” on page 116
- “Editing the properties of the cache directory for IIS 5” on page 119
- “Edit the properties of the images directory for IIS 5” on page 119
- “Restart the web server for IIS 5” on page 120

### ***Create a virtual directory for IIS 5***

Create a virtual directory for the web as follows.

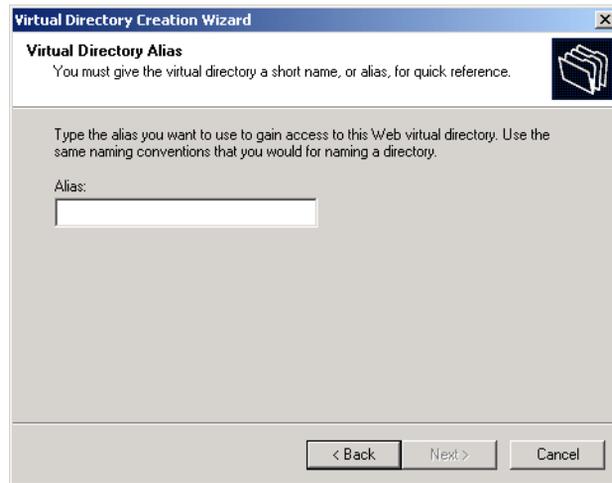
- 1** Start the Internet Services Manager.  
Start > Settings > Control Panel > Administrative Tools > Internet Services Manager
- 2** In the Navigator window, right-click Default Web Site.

**3 On the shortcut menu, click New > Virtual Directory.**

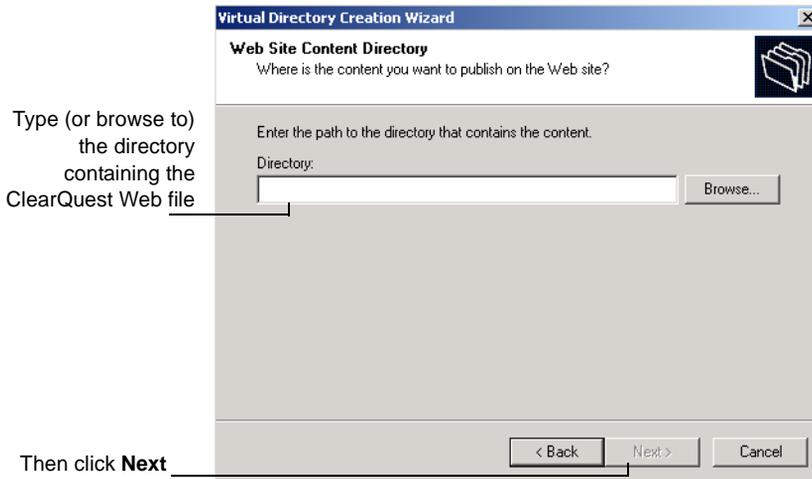


**4 Click Next when the Virtual Directory Creation Wizard appears.**

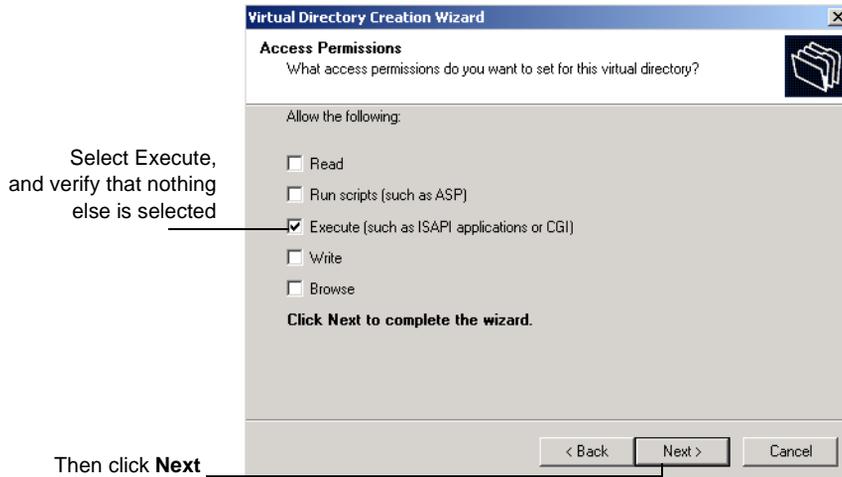
**5 Type an alias name, such as CqWeb. Do not use a “/” character in the alias name. Then click Next.**



- 6 Type or browse to the name of the directory containing the ClearQuest Web files. These files are located in the WWW subdirectory of the ClearQuest installation directory. For example:  
C:\Program Files\Rational\ClearQuest\WWW



- 7 Clear Read, clear Run scripts, and select Execute. Then click Next.

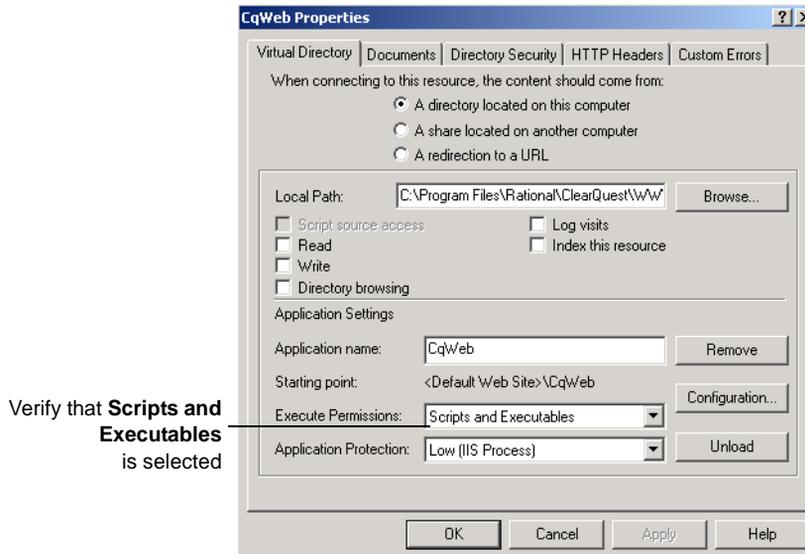


- 8 Click Finish to complete the Wizard.

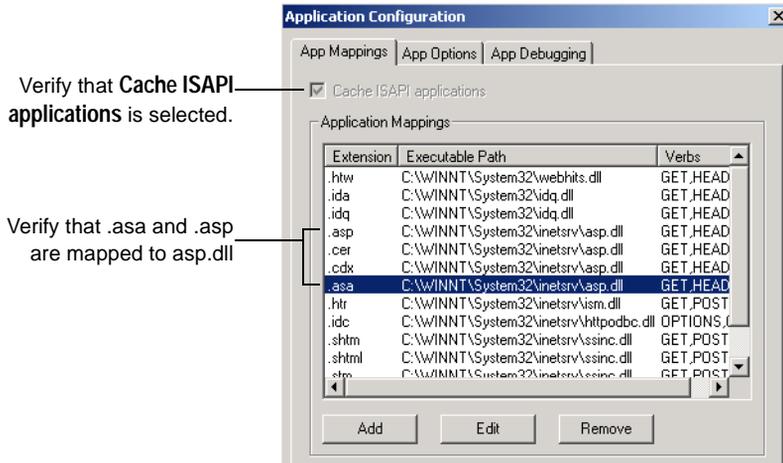
### ***Edit the properties of the virtual directory for IIS 5***

Edit the properties of the virtual directory as follows:

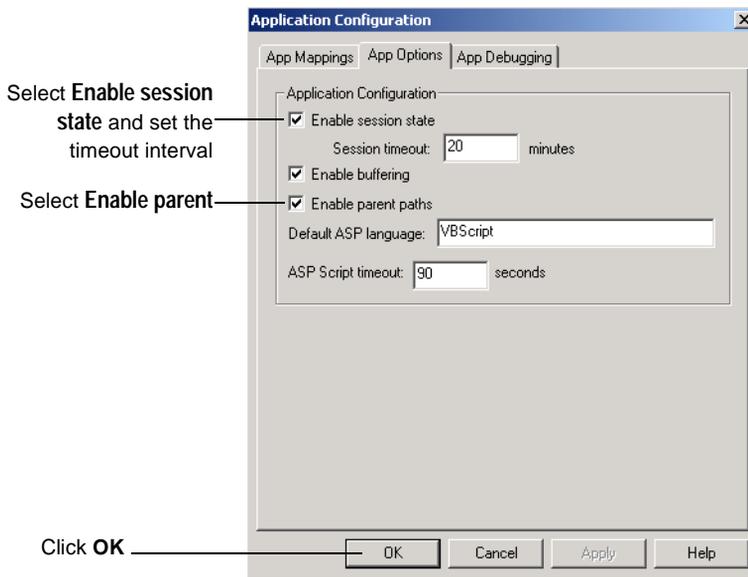
- 1 In the Internet Information Services left pane, navigate to the virtual directory you created earlier.
- 2 Right-click on the virtual directory and select Properties from the shortcut menu.
- 3 In the Properties dialog box, click the Virtual Directory tab.



- 4 In the same Virtual Directory tab, click Configuration. In the Application Configuration dialog, click the App Mappings tab.



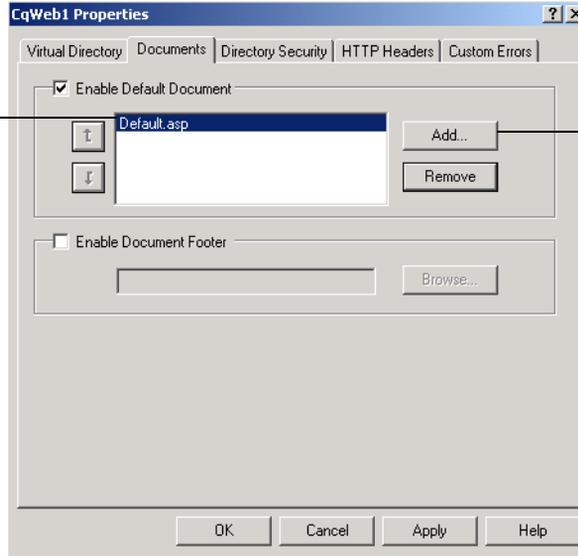
- 5 In the same Application Configuration dialog box, click the App Options tab.



**6 In the Properties dialog box, click the Documents tab.**

If necessary, add the Default.asp document to the list of documents...

then remove any other documents and select **Default.asp** as the default

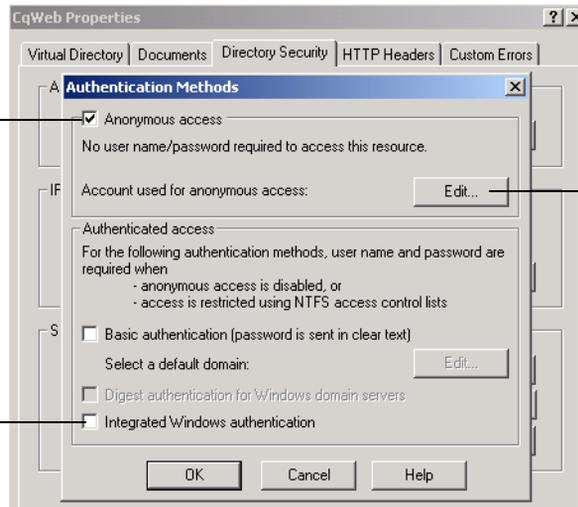


Click to add the Default.asp document to the list

**7 In the same Properties dialog box, click the Directory Security tab. In the Anonymous Access and Authentication Control, click Edit to open the Authentication Methods dialog box.**

Select **Allow Anonymous Access**

Verify that Integrated Windows authentication is NOT selected. If the box has a check mark, be sure to clear it.



Then click **Edit** to define the anonymous user account

## 8 Define the anonymous user account:



9 Click OK.

10 Type the password in the Confirm Password dialog box, then click OK.

11 Click OK, then click OK again to close the Properties dialog.

### ***Editing the properties of the cache directory for IIS 5***

Edit the properties of the cache subdirectory as follows:

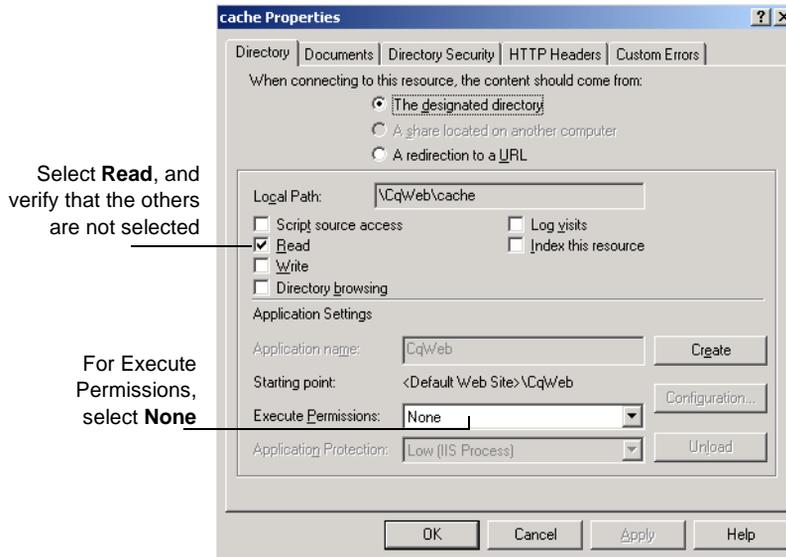
- 1 In the Internet Information Services left pane, navigate to the cache directory under the virtual directory name.
- 2 Right-click the cache directory.
- 3 Click Properties from the shortcut menu.
- 4 In the Properties dialog box, click the Directory tab.
- 5 Select the Read check box. Verify that no other options are selected.
- 6 For Execute Permissions, select None.
- 7 Click OK.

### ***Edit the properties of the images directory for IIS 5***

Edit the properties of the images subdirectory as follows:

- 1 In the Navigator window of Internet Information Services, expand the directory tree of the Default Web Site until you locate the images directory under your alias name.

- 2 Right-click the images directory.
- 3 Click Properties from the shortcut menu.
- 4 In the Properties dialog box, click the Directory tab.
- 5 Select the Read check box. Verify that no other options are selected.
- 6 For Execute Permissions, select None.



- 7 Click OK.

### ***Restart the web server for IIS 5***

Close Internet Information Services, saving your console settings, then restart the web server.

You have completed installing and configuring the ClearQuest web server for IIS 5.

## Enabling E-mail notification for web end users

After installing ClearQuest Web (either for an initial or an upgrade install), you can set up your ClearQuest web clients to have e-mail notification according to the business rules of your schema. To extend e-mail notification support to users of the web client, perform the following steps.

- 1 Log in to your ClearQuest Web Client with administrator privileges.
- 2 In the tool bar, select Operations and then Edit Web Settings.
- 3 Scroll down to Enable e-mail Notification.

Enable E Mail Notification	
Send Active	<input type="checkbox"/> (0 or 1)
Mail Transport	MAPI (SMTP or MAPI)
MS Exchange Server	QE_TEST3 (Only if transport is MAPI)
MAPI Profile Alias	qetest (Only if transport is MAPI)
SMTP Host	(Only if transport is SMTP)
Real Name	(Your web server machine name)
Reply To	(in form MyGeneric.Return.Address@MyDomainName)

- 4 Enter your email settings.

Setting	Description
Send Active	Enter 1 to enable e-mail notification. Enter 0 to disable it.
Mail Transport	Specify SMTP or MAPI depending on your mail transport type.
MAPI Server	If you are using MAPI, enter the mail server name.
MAPI Profile Alias	If you are using MAPI, enter the profile alias name.
SMTP Host	If you are using SMTP, enter the host name.
Real Names	Enter your web server machine name or leave blank. If you enter a web server name, messages will display the server name in the <b>From</b> field.
Reply To	Enter generic reply-to address for this web server or leave blank.

**Note:** For e-mail notification to work, you must have added the e-mail package to your schema and setup record types for packages. For more information on adding packages and setting up record types, see *Administering Rational ClearQuest* or the ClearQuest Designer help system.

- 5 At the top of the web page click on OK to commit your changes.



## Accessing ClearQuest Web

To enable your users to access ClearQuest over the web, tell them to enter the URL:

```
http://<host>/<alias>
```

where:

<host> is the host name of the ClearQuest Web server machine  
<alias> is the directory containing the ClearQuest Web files.

### Using the Advanced Query editor

ClearQuest Web's advanced query editor requires Java Runtime (JRE) plug-in. For Windows platforms, this plug-in is provided by ClearQuest Web if it is not already installed on the client machine. For UNIX platforms, users are directed to the JavaSoft web site which may or may not have a download for the desired platform.

**Note:** Only users with Query Editor privileges or Super User privileges can access this function.

**Note:** The Java Runtime Environment is under active development by JavaSoft, and may not be available for all platforms. Consult the JavaSoft and Netscape web sites for details. On platforms where the JRE is not available, clients will not be able to use the Advanced Query Editor function of ClearQuest Web.



# 8

## Silent Installation of Rational ClearQuest

You can configure Rational Software Setup to perform silent installations of Windows versions of Rational software. Silent installations allow you to perform an installation of a Rational Software product, using the same parameters, repeatedly on a number of systems.

The following sections provide a brief summary of the silent installation features.

**Note:** We recommend you read Rational's *Silent Installation White Paper* before you attempt a silent installation. The white paper is available from the Rational Web site at [http://www.rational.com/products/whitepapers/101458.jsp/](http://www.rational.com/products/whitepapers/101458.jsp).

## Overview of silent installations

This section describes how to perform a silent install. The basic steps, explained below, are:

- 1 Record an installation session.
- 2 Optionally, add a post-installation command to the recorded installation.
- 3 Execute the installation procedure.

### Recording the software installation

You can record a software installation session and then use the responses that you provide to replay the installation. At the end of the recorded installation procedure, you will be given the option to exit without installing the product.

- 1 Insert the Rational ClearQuest software CD in a CD drive.
- 2 Open a command window on your system and run `RSSetup` with the `-autocapture` switch. For example:

```
<Install Location>\setup\rssetup -autocapture
```

Where `<Install Location>` is the location of the Rational ClearQuest software CD.

- 3 When the Rational Software Setup program starts, proceed with the installation procedure on “Understanding the ClearQuest install process” on page 3. Your responses will be recorded in the responses file which is named as follows:

```
<Install Path>\RSSetup\response.ini
```

**Note:** The option to use a temporary license is not supported when using the `-autocapture` switch. The silent installation procedure will not support the capture of license certificate information into the `response.ini` file.

- 4 After you have answered all of the questions related to the installation, you will be prompted to continue with the installation of the product or to exit from the setup program. Click OK to

proceed with the installation or Cancel to exit. Even if you cancel at this point, your answers are still saved.

### **Example**

The following example shows how to record an installation of Rational ClearQuest.

```
<Install Location>\setup\rssetup -autocapture /product  
ClearQuest-1.1
```

### **Specifying a post-installation command**

You can specify a command that will be performed after the silent installation has completed.

After you have completed preparation for a silent installation, perform the following steps:

- 1** Edit the response file by appending lines with the label [PostInstallCmd] to the end of the file.

```
[PostInstallCmd]  
Command=post-installation-commands.bat
```

where, the `post-installation-commands.bat` is a batch file that contains the commands you want to execute. Such a file might contain the following commands:

```
licadmin -fserver.txt  
net send administrator "Installation Complete"
```

In this example, the License Key Administrator, `licadmin`, starts and uses the information in `server.txt` to specify the name of the license server that the current system will use. The batch file then sends a message to the administrator, indicating that the installation procedure is complete.

- 2** Save the response file to a unique name (to ensure that it is not overwritten by subsequent autocaptures). For example, save the response file with a name such as `c:\responses\ent-w-post.ini`

## Performing a silent installation

After you have recorded your responses, use the response file to replay the installation. For example:

```
<Install Location>\setup\rssetup -silent  
-response:response-path
```

Where `response-path` is the path of the response file. The default path is as follows:

```
"c:\Program Files\Rational\RSSetup\response.ini"
```

**Note:** If a response file is in the default location, that response file will be used each time you run the installation procedure. Specifying a response file, using the `-response:response-path` parameter, will override the default response file.

If you specify `-autocapture` on the `RSSetup` command line, your installation will initially select the product name identified in the previous `response.ini` file, but will allow you to select a new product for installation. A new `response.ini` file will be saved at the end of the installation procedure.

## Preparing multiple response files

You can save multiple response files to support attended installation of different products.

- 1 Identify a directory where you will store your response files. The following examples use a directory named as follows:

```
C:\responses
```

- 2 Record the response file for each product you want to install.
- 3 Rename the response file with a unique file name. For example, save the ClearQuest 2.0 response file as:

```
C:\responses\ClearQuest2_0responses.ini.
```

- 4 Perform the installation and specify the path to the response file as a parameter to the `-response` switch. For example:

```
<Install Location>\setup\rssetup -silent  
-response:c:\response\ClearQuest2_0response.ini
```

### ***Examples***

#### **To record an installation of Rational ClearQuest version 2.0:**

```
<Install Location>\setup\rssetup -autocapture /product  
ClearQuest-2.0
```

#### **To remove Rational ClearQuest version 2.0:**

```
<Install Location>\setup\rssetup /uninstall /product  
ClearQuest-2.0
```

## Command line utilities

### RSSetup

This section provides the syntax for RSSetup, and well as a table of RSSetup command parameters.

#### Syntax

```
RSSetup [-silent [-response:response-path]] |  
        [-verbose [-response:response-path]] |  
        [-autocapture]  
        [/product <product>] [/install /uninstall /update]
```

RSSetup Command Parameter	Description
-silent	Performs a silent (unattended) installation.
-verbose	Replays a previously recorded installation, allowing you to override the recorded responses. <b>Note:</b> if you override the responses, those changes are not written to the response file.
-response: <b>response-path</b>	Specifies the path to the response file. <b>response-path</b> is the path for the response file. You must specify the <b>response-path</b> . The default path is <Install Location>\Setup\ RSSetup\response.ini, where <Install Location> is the location of the installation files.
-autocapture	Records your responses to a software installation, storing the responses in a file for later replay.
/product <b>product-identifier</b>	Specifies the product you are installing. This parameter does not apply for silent installations. For a silent installation, you specify the product name in the response file. See page 131 for the list of identifier you can use with this switch.

<b>RSSetup Command Parameter</b>	<b>Description</b>
/install	Installs the product you specified with the /product switch. This switch cannot be combined with /uninstall or /update. This parameter does not apply for silent installations. For a silent installation, you specify the product name in the response file.
/uninstall	Removes the product you specified with the /product switch. This switch cannot be combined with /install or /update.
/update	Updates the product you specified with the /product switch. This switch cannot be combined with /install or /uninstall. This parameter does not apply for silent installations.

The table below lists the product identifiers you must use with the /product switch.

<b>Product Name</b>	<b>Product Identifiers</b>
Rational LoadTest	atbuLoadTest
Rational Suite Performance Studio Agent	atbuPSAgent
Rational Suite Performance Studio	atbuRSuitePerformanceStudio
Rational Test Enablers	atbuSetupEnablers
Rational TeamTest	atbuTeamTest
Rational TestAccelerator	atbuTestAccelerator
Rational Robot	atbuTSRobot
Rational ClearQuest	ClearQuest-1.1
Rational PureCoverage	coverageNT
Rational Suite DevelopmentStudio for UNIX	dsbuRSDSU
Rational Developer Kit	dsbuDeveloperKit
Rational Purify	purifyNT
Rational Quantify	quantifyNT
Rational RequisitePro	rmbuRequisitePro

<b>Product Name</b>	<b>Product Identifiers</b>
Rational RequisiteWeb	rmbuRequisiteWeb
Rational Rose Inline EJB Addin	Inline
Rational Rose Enterprise Edition	Rose98i
Rational Rose Professional C++ Edition	Rose98iC++Professional
Rational Rose Professional J Edition	Rose98iJavaProfessional
Rational Rose Modeler Edition	Rose98iModeler
Rational Rose Professional Visual Basic Edition	Rose98iVBProfessional
Rational Rose Professional Data Modeler Edition	RoseDataModelerProfessional
Rational Unified Process	ruObjectory51
Rational SoDA for Word	SoDA
Rational Suite AnalystStudio	wsbuAnalystEdition
Rational Suite DevelopmentStudio	wsbuDevelopmentStudio
Rational Suite Development Studio - RealTime Edition	wsbuDevelopmentStudioRT
Rational Suite Enterprise	wsbuEnterprise
Rational License Server	wsbuFLEXImServer
Sybase SQL Anywhere Database Server	wsbuSQLAnywhereServer
Rational Suite TestStudio	wsbuTestStudio
Rational Suite Web Server Components	wsbuWebComponents

## **License Key Administrator**

You can run the Rational License Key Administrator from a command line or batch file to automate your license key installations and configuration.

Additional detailed information about the License Key Administrator command line options and usage is available on the Rational Suite web site:

<http://www.rational.com/products/rs/prodinfo/index.jttml>.

## Syntax

```
licadmin -ffilename.ext
```

Parameter	Description
-ffilename.ext	Specifies the path to the license parameter file. The license parameter file specifies the name of the license key server that you will use. For example: Server:group-license-server The keyword Server is case-sensitive.

The status of the execution of this command is written to a file named `filename.ext_STATUS`, where `filename.ext` is the name of the license parameter file you used. The status file is created in the directory where you executed the `licadmin` command.

## Example

- 1 Create a file that contains the following line:

```
Server:group-license-server
```

where `group-license-server` is the name of your License Server system.

- 2 Save the file as `server-info.txt`.
- 3 In a command window, run the following command:

```
licadmin -fserver-info.txt
```

Your system will be configured to use floating license keys from `group-license-server`.



# 9

## Upgrading ClearQuest

This chapter describes how to upgrade your ClearQuest databases and packages created with a previous installation.

**Important:** If this is your first installation of ClearQuest, no upgrading is required.

Before you begin the upgrade, read the release notes (Start > Programs > Rational > Rational ClearQuest > Rational ClearQuest Release Notes) to become familiar with what has changed in this release.

Topics covered in this chapter include:

- “Understanding the upgrade process” on page 136
- “ClearQuest upgrade package basics” on page 139
- “Upgrading ClearQuest integrations” on page 144
- “Applying schema changes to user databases” on page 167
- “Upgrading from ClearQuest version 1.1” on page 169
- “Upgrading feature levels” on page 170
- “Some helpful utilities” on page 178

## Understanding the upgrade process

The upgrade process is dependent on the complexity of your system and the extent to which you have customized your schema. Review the following conditions for applicability to your ClearQuest system.

- If you have designed your ClearQuest system based on the ClearQuest predefined schemas or have added packages to your customized schema, you will need to install the latest packages. To determine whether packages have been installed in your schema, see “Analyzing your current package version” on page 140. See “Upgrading packages” on page 143 to apply the package upgrades.
- If you have integrations with other Rational products imbedded in your ClearQuest system, you will have to install the latest Rational Suites products and upgrade the ClearQuest integrations with the latest packages. This process is sequence dependent and may require additional steps. See “Upgrading ClearQuest integrations” on page 144.
- If you want to avail yourself with the latest ClearQuest features or if you have a ClearQuest release prior to release 1.1, you will have to upgrade your feature level, see “Upgrading feature levels” on page 170.

### ClearQuest for the administrator

The following steps summarize the upgrade procedure for the administrator.

- If you want to author report formats, upgrade to Crystal Reports™ 8.0.
- Install ClearQuest. It is not necessary to un-install previous versions of ClearQuest before installing ClearQuest. See “Installing and configuring ClearQuest for an administrator” on page 39.
- Installing ClearQuest may reset the connection to the ClearQuest database. Launch the Rational ClearQuest Maintenance Tool

to establish a new connection to your ClearQuest database. See “Connecting to a schema repository” on page 137.

- If you have added integrations to your ClearQuest schema, you must upgrade the installation, see “Upgrading ClearQuest integrations” on page 144.
- If you have added packages to your schema, install the latest packages, see “Upgrading packages” on page 143.
- If your current ClearQuest version is prior to release 2.0, you must upgrade your schema repository and user databases to the latest feature level using the Rational ClearQuest Maintenance Tool. See “Upgrading feature levels” on page 170.
- Configure ClearQuest Web as needed. See “Installing and Configuring ClearQuest Web” on page 93.

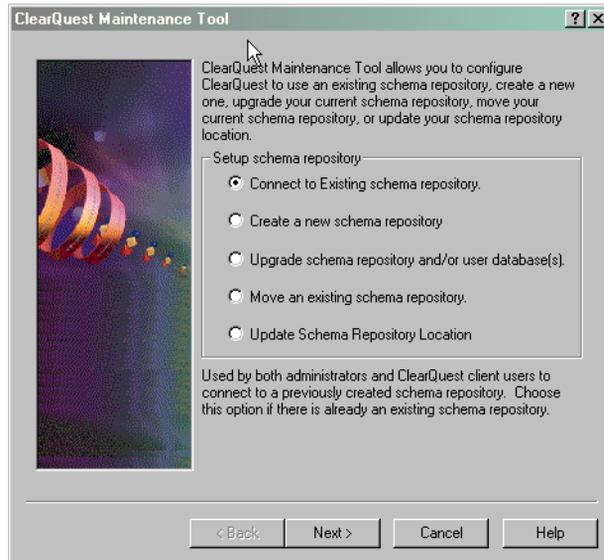
### **ClearQuest for the end-users**

- Install ClearQuest client software. It is not necessary to un-install previous versions of ClearQuest before installing ClearQuest. See “Installing and configuring ClearQuest Windows for end-users” on page 63.
- Installing ClearQuest resets the connection to the ClearQuest database. Execute ClearQuest to establish a new connection to your ClearQuest database. See “Connecting to a schema repository” on page 137.

### **Connecting to a schema repository**

After you have installed the latest ClearQuest release, you may have to reconnect to your schema repository.

- 1 Launch the ClearQuest Maintenance Tool (Start > Programs > Rational > Rational ClearQuest > Rational ClearQuest Maintenance Tool).
- 2 Select Connect to Existing schema repository. Click Next.



- 3 Enter your database properties. Click Next.

**Note:** If you saved a profile that includes all the information you need before you install the latest ClearQuest version you can simply enter the path and filename in the Profile field. A profile file has an \*.ini extension.

For example: dev\_profile.ini.

- 4 Click Finish. Wait for the tool to perform the connection, then click Done.

## ClearQuest upgrade package basics

If any of the following conditions apply, you will have to upgrade some or all of the packages installed in your schema:

- You are currently using or have built your schema based on any of the following predefined schemas:
  - Defect Tracking
  - AnalystStudio
  - DeveloperStudio
  - TestStudio
  - UnifiedChangeManagement
  - Enterprise
- You have customized your schema by adding integrations or individual packages.

**Note:** To determine whether you have packages installed in your schema, refer to “Analyzing your current package version” on page 140.

If you do not have any of the ClearQuest packages installed, you do not need to upgrade your packages. For more information on adding integrations and packages, refer to *Administering Rational ClearQuest*.

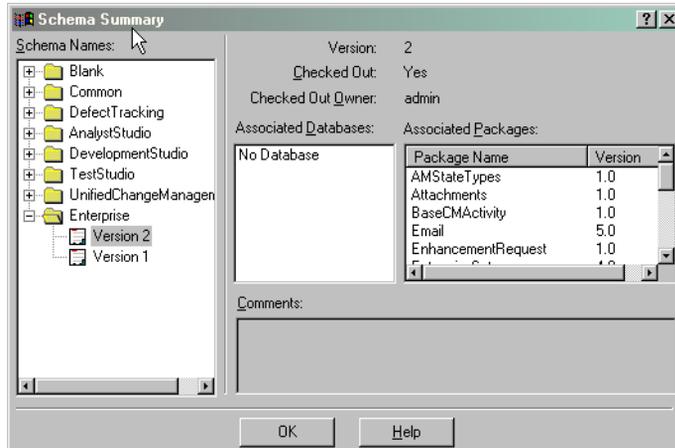
At a high level, the steps you should follow to upgrade packages are:

- 1 Find out what packages you have currently installed in each of your schemas. See “Analyzing your current package version” on page 140.
- 2 Upgrade your integrations. See “Upgrading ClearQuest integrations” on page 144.
- 3 Upgrade your user databases. See “Applying schema changes to user databases” on page 167.

## Analyzing your current package version

To find out what packages have already been added to your schema, you can either log into the ClearQuest designer and view your schema summary, or you can use the `package_upgrade_info.bat` utility. For more information, see “Viewing package versions with `package_upgrade_info.bat`” on page 182.

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 Click Cancel in the Open Schema Dialog box.
- 3 Choose View > Schema Summary to determine the packages are currently applied to the schema.
- 4 Open the folder with your schema name and select the appropriate version. If multiple databases are associated with this schema they will be displayed in the central list display.



- 5 The list in the right scroll area will display every package name and version currently installed in your schema.

- 6 The following table contains the latest version numbers for all the packages. A column is provided for you to write down all the packages that are currently installed in your schema.

<b>Package Name</b>	<b>Latest Version</b>	<b>Your Version</b>	<b>Go To...</b>
AMStateTypes	1.0		"Upgrading Unified Change Management (UCM) integrations" on page 161
Attachments	1.0		"Upgrading packages" on page 143
BaseCMActivity	2.0		"Upgrading Unified Change Management (UCM) integrations" on page 161
ClearCase	1.0		"Upgrading packages" on page 143
ClearCase	Upgrade 1.0		"Upgrading from ClearQuest version 1.1" on page 169
ContentStudio	1.0		"Upgrading packages" on page 143
Customer	2.0		"Upgrading packages" on page 143
Email	5.0		"Upgrading E-Mail notification" on page 165
Email	Upgrade 4.0		"Upgrading from ClearQuest version 1.1" on page 169
Enhancement Request	1.0		"Upgrading packages" on page 143
History	1.0		"Upgrading packages" on page 143
Notes	2.0		"Upgrading packages" on page 143
PQC	2.0		"Upgrading packages" on page 143
Project	1.0		"Upgrading packages" on page 143

<b>Package Name</b>	<b>Latest Version</b>	<b>Your Version</b>	<b>Go To...</b>
Repository	2.0		"Upgrading Rational Administrator integrations" on page 144
RequisitePro	1.5		"Upgrading RequisitePro integrations" on page 156
RequisitePro	1.5 Upgrade		"Upgrading RequisitePro integrations" on page 156
*RequisitePro Supplement	1.1		
*RequisitePro Supplement	1.1 Upgrade		
Resolution	1.0		"Upgrading packages" on page 143
Resolution	Upgrade 1.0		"Upgrading from ClearQuest version 1.1" on page 169
TeamTest	3.0		"Upgrading TeamTest integrations" on page 155
TeamTest	Upgrade 0.1		"Upgrading TeamTest integrations" on page 155
UCMPolicyScripts	2.0		"Upgrading Unified Change Management (UCM) integrations" on page 161
UnifiedChange Management	3.0		"Upgrading Unified Change Management (UCM) integrations" on page 161
VisualSourceSafe	2.0		"Upgrading packages" on page 143
VisualSourceSafe	Upgrade 2.0		"Upgrading from ClearQuest version 1.1" on page 169

**\* RequisitePro Supplement 1.1 has been superseded by RequisitePro 1.5 Upgrade in ClearQuest 2001A. If the RequisitePro Supplement 1.1 has been installed into your schema, you have probably already completed the modifications**

detailed in “Updating Repository references” on page 146 and will not need to complete them again.

### **Upgrading packages**

- 1** Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2** If the Open Schema Dialog box is displayed, click Cancel.
- 3** From the ClearQuest Designer menu bar, select Package > Package Wizard.
- 4** Use the Package Wizard to apply packages. For more information, see *packages, installing into a schema* in the ClearQuest Designer Help Index.
- 5** Check in your changes.
- 6** Repeat the process of adding packages until you have upgraded all of your integrations checking in your changes with each new package upgrade.
- 7** After all of the packages have been installed, upgrade your user databases by following the process in “Applying schema changes to user databases” on page 167.

## Upgrading ClearQuest integrations

If you have ClearQuest integrations with any of the following products, you will have to update the product installation and install the latest ClearQuest integration packages:

- Rational Administrator, see “Upgrading Rational Administrator integrations” on page 144.
- Rational TeamTest, see “Upgrading TeamTest integrations” on page 155.
- Rational RequisitePro, see “Upgrading RequisitePro integrations” on page 156.
- Rational Unified Change Management, see “Upgrading Unified Change Management (UCM) integrations” on page 161.
- E-Mail notification, see “Upgrading E-Mail notification” on page 165.

## Upgrading Rational Administrator integrations

To support the conversion of Rational Repositories to Rational Administrator Projects, a new version of the Repository package was developed. The upgrade process is dependent on what version of Repository is currently installed in your schema. See “Analyzing your current package version” on page 140. Refer to the following table for appropriate steps to complete in the following procedure.

Package Name	Version	Perform these steps...
Repository	0.2	1. Apply Repository 2.0 in Step 4 on page 145. 2. Apply “Updating Repository references” on page 146
Repository	1.0	1. Apply Repository 2.0 in Step 4 on page 145.

**Note:** If you have an existing integration with Rational Administrator, RequisitePro, or TeamTest, and a Repository Package is not present, you may have an integration developed from an “add-in” present from ClearQuest release 1.1. For

information on upgrading this integration, see “Upgrading from ClearQuest version 1.1” on page 169.

To upgrade to the latest Repository package:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 Click Cancel in the Open Schema Dialog box.
- 3 In the ClearQuest Designer menu bar, select Package > Package Wizard.
- 4 In the Package Wizard, select the appropriate version of the Repository package as shown in table above. Click Next.  
  
If the package you want is not present in the list, click More Packages. Click OK to return to the Select a Package list. Select the package and click Next.
- 5 To apply packages to a schema, select the schema to upgrade with this package. Click Next.
- 6 If record types are displayed in the Setup Records Types for Packages dialog box, do not check any of them. The Package Wizard will automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to add new package integrations. For more information on installing new packages and adding integrations, refer to *Administering Rational ClearQuest*. Click Finish.
- 7 From the ClearQuest Designer menu bar, select File > Checkin to check this new package into your schema. Click OK after verifying your choice. Click OK again in the ClearQuest Checkin Confirmation dialog box.
- 8 Perform the “Updating Repository references” on page 146.
- 9 Repeat this process for each of your schemas.
- 10 After all of the package upgrades and modifications have been performed, upgrade your user databases by following the process in “Applying schema changes to user databases” on page 167.

## ***Updating Repository references***

**Important:** If you are upgrading from Repository 1.0 to 2.0, you do not have to complete the following steps. They were already completed when you updated to Repository 1.0 with ClearQuest 2000.

As part of the application of the Repository 1.0 package, you will notice that many instances of the RepoProject field associated with some record types (such as Defect and EnhancementRequest) are renamed to RProject. The automatic upgrade process cannot fully rename every instance of this field/record type. The ClearQuest administrator will need to check and manually update the following:

- Forms with references to RepoProject. See “Updating form controls with RepoProject references” on page 146.
- User defined hooks with references to RepoProject. See “Updating user defined hooks” on page 148.
- Dependent field lists that reference RepoProject. See “Updating Web dependent field lists” on page 150.
- Report formats that include RepoProject fields. See “Updating report format RepoProject references” on page 151.
- Report formats that include RepoProject headings. See “Updating report format headings” on page 154.

## ***Updating form controls with RepoProject references***

As part of the upgrade process for the Repository package, the RepoProject field was renamed to RProject. Consequently, existing form controls that referenced the RepoProject field now reference a non-existent field and must be repaired.

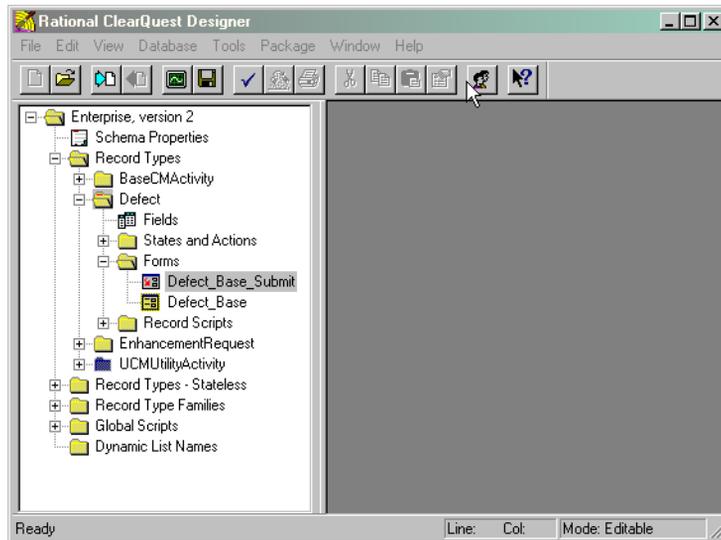
If you have used any of the out-of-the-box schemas such as AnalystStudio, DevelopmentStudio, TestStudio, or Enterprise, you must update all form controls that reference RepoProject and replace them with RProject. In addition, this step is necessary if you have included the RepoProject field in any ClearQuest forms that you might have created in your own custom schema.

The following procedure defines the process for updating forms for a typical out of the box example using the Enterprise schema:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 In Open Schema Step 1 of 2 dialog box select the schema modify and click the radio button Checkout a schema to edit.... For the purpose of this example the Enterprise schema is selected. Click Next.
- 3 Enter the reason for this schema modification in the next screen. For this example the explanation is “Update Defect forms with new RASProject Fields.” Click Finish.

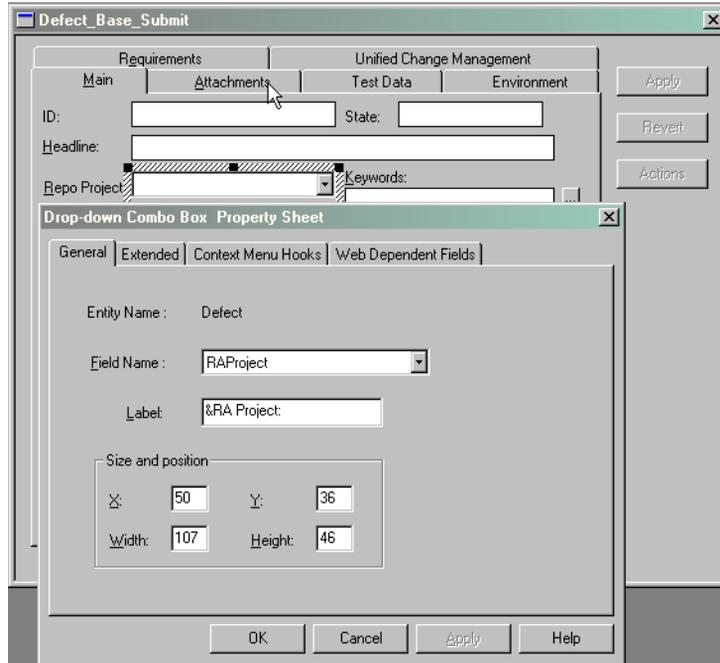
**Note:** If you are already in the ClearQuest Designer you can simply select File > Open Schema. from the menu bar. It will guide you through the process defined in steps 2 and 3 above.

- 4 In the Designer Workspace expand the Record Type folder, the Defect folder, and the Forms folder.



The out of the box schema for the Defects record type contains two forms, Defect\_Base\_Submit, and Defect\_Base. You will need to modify both forms.

- 5 Open the Defect\_Base\_Submit form. Find the RepoProject label and right click the drop down list and select Properties.



- 6 Select the RAProject from the FieldName scroll down list and change the Label to RA Project.
- 7 Repeat these steps for each of the forms in the Defect Record Type and all other Record Types and Stateless Record types where you have included a reference to RepoProject. The out of the box Enterprise schema includes references to RepoProject in both forms defined for the Defect and the EnhancementRequest Record types.

### ***Updating user defined hooks***

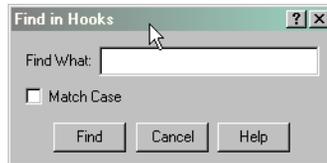
Change user defined hook body code that references RepoProject field or stateless record type to RAProject:

While developing hooks, you may have added custom script code that references RepoProject fields or the RepoProject stateless

record type. This will need to be modified using the hook editor to reference RAPProject. Any hook code that is owned by an out of the box ClearQuest package will automatically be modified to use RAPProject.

To find all hooks that define references to RepoProject field:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 Click Cancel in the Open Schema dialog box.
- 3 In the ClearQuest Designer menu bar, select File > Open Schema.
- 4 Select one of your schemas and click Next.
- 5 Enter the reason for this schema modification in the next screen. For this example the explanation is “Update hook fields with new RAPProject Fields.” Click Finish.
- 6 From the ClearQuest Designer menu select Edit > Find in Hooks.



- 7 Type in RepoProject. All the instances of this field name in the hook scripts will be displayed in the bottom window of the ClearQuest Designer.
- 8 Double-click on each of the instances to launch the Script Editor. Replace each occurrence of RepoProject with RAPProject.
- 9 Select Hooks > Compile to check the syntax of your script code.  
  
Verify that all the instances have been corrected by re-running the Find in Hooks dialog in step 6. When no instances are returned proceed to the next step.
- 10 Check in your schema changes.
- 11 Repeat this process for each of your schemas.

### ***Updating Web dependent field lists***

If the you have defined dependent fields and you have also designated then as web dependent, you will need to modify the web dependent field list to remove RepoProject and replace it with RAProject.

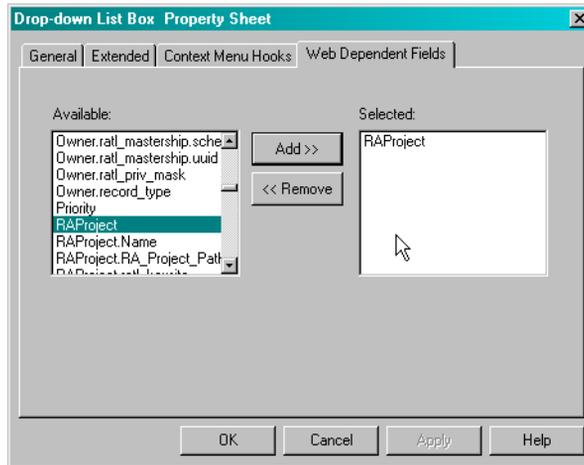
To change dependent field lists:

- 1** Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2** In the Open Schema dialog box select the schema in which you have defined a web dependent hook related to RepoProject.
- 3** Click the radio button Checkout a schema to edit... Click Next.
- 4** Enter the reason for this schema modification in the next screen. For this example the explanation is "Update Web Dependent fields to reference new RAProject." Click Finish.

**Note:** If you are already in the ClearQuest Designer you can simply select File> Open Schema. from the menu bar. It will guide you through the process defined in steps 2 and 3 above.

- 5** Expand the Record Type folder, expand the appropriate record type.

- 6 Open the form that includes the RASProject parent field. Right click on the field, select Properties, and click on the Web Dependencies Tab.



- 7 Replace the RepoProject entry in the Selected List with RASProject.
- 8 Check in your schema changes.
- 9 Repeat this process for each of your schemas.

### ***Updating report format RepoProject references***

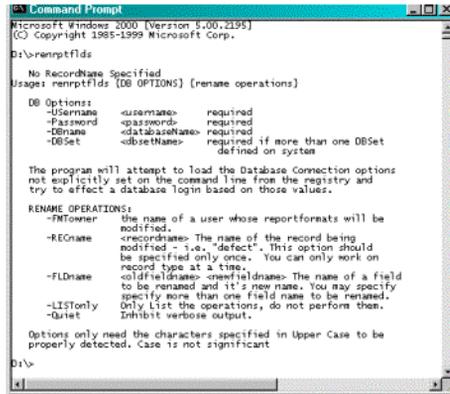
Convert Crystal Reports report formats that reference RepoProject to RASProject.

Several user defined Crystal Reports report formats may have referenced RepoProject and the package upgrade utility does not handle redirecting such references to the new field name. Editing, authoring, or running a report format which contains these obsolete references will result in a ClearQuest error message indicating that the fielddef "RepoProject" does not exist and that the user should contact technical support.

To work around this problem, Rational has provided a tool to convert the RepoProject field references to RASProject. The tool (which can be used any time a field is renamed with ClearQuest

designer) is located in the ClearQuest install directory and is called `renrptflds.exe`. Its usage can be obtained by typing “`renrptflds`” at the command line with no parameters.

- 1 To view all usage for `renrptflds.exe`, type `renrptflds` at the command line with no parameters.



- 2 To completely convert all personal report formats, have each user who has any personal report formats run the following command once for each record type in their schema, for each user database. `renrptflds -us username -p "" -db cqdbname -fmt username -rec recordtype -fld old_field new_field`

where

parameter	variable	description
-us	username	ClearQuest login user name
-p	""	ClearQuest user login password. Double quote marks signifies no password.
-db	cqdbname	ClearQuest database name
-fmt	username	ClearQuest login user name
-rec	recordtype	ClearQuest Record Type with the field that has been changed.
-fld	old_field	The name of the referenced field you want to change
	new_field	The name of the new reference field.

## Example

To convert all RepoProject field references to RProject for the “tkirk” user’s personal report formats based on the “Defect” record type for the SAMPL database, type the following at the command line:

```
renrptflds -us tkirk -p "" -db SAMPL -fmt tkirk -rec  
Defect -fld RepoProject RProject
```

**Note:** The `-fmt` option must contain the same user name as the `-us` option. It is not possible to convert another user’s report format without that user’s password.

- 3 To convert public report formats, the user with Super User privileges should type the following command at the command line:

```
renrptflds -us admin -p "" -db SAMPL -rec Defect -fld  
RepoProject RProject
```

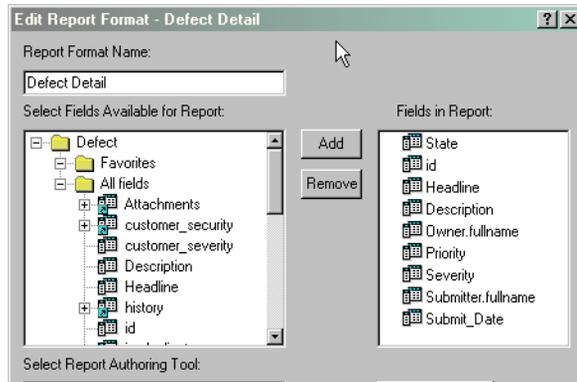
**Note:** The `-fmt` option is omitted. This signifies that public report formats should be updated. This command must specify a user who has **Super User** privileges in the `-us` operand. The administrator should run this command once for each user database for each record type containing the RepoProject field.

### ***Updating report format headings***

Running the commands described above will fix field references in the report format. If your report formats contain headings indicating the names of the fields, you may also wish to change that text to indicate the new field name. The following process requires that you have Crystal Reports 8.0 installed.

To upgrade your report format headings:

- 1 Log into Rational ClearQuest (Start > Programs > Rational ClearQuest > Rational ClearQuest) with Super User or Public Folder Administrator privileges.
- 2 Right click on the report you want to update and select Edit.



- 3 Click the Author Report button. This will launch Crystal Reports.
- 4 In the Crystal Reports Designer, select from the menu bar Database > Verify Database.
- 5 Click “Yes” to proceed to fix-up the report.
- 6 On the Map Fields dialog, map the report field RepoProject to the active data field RProject by clicking on each field in turn, clicking Map, and then clicking OK.
- 7 On the report designer layout page, the field’s name will be set to the new value RProject, but text references such as page header

information may still contain the old value. Edit these values appropriately.

- 8 Exit Crystal Reports Designer, saving the changes.
- 9 Click OK on the ClearQuest Edit Report Format dialog to save the changes to the ClearQuest database.
- 10 Repeat this procedure for each report format (private or public) containing references to the old field name. If this procedure is not performed, the report will run correctly and show correct data, but textual references such as column headings may appear incorrectly.
- 11 If you have finished upgrading your schema, apply the schema changes to your user database. See “Applying schema changes to user databases” on page 167.

### **Upgrading TeamTest integrations**

**Warning:** The upgrade of TeamTest Packages is dependent on the Repository package upgrades. If you do not first upgrade the Repository package the upgrade for TeamTest package will fail.

If you are upgrading from the TeamTest out of the box schema shipped with ClearQuest version 1.1 you will first have to apply Resolution Upgrade, see “Upgrading from ClearQuest version 1.1” on page 169.

To apply the Repository packages:

Follow the procedure in “Upgrading Rational Administrator integrations” on page 144 to upgrade your Repository packages.

To apply the TeamTest packages:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 Click Cancel in the Open Schema dialog box.
- 3 In the ClearQuest Designer menu bar, select Package > Package Wizard.

- 4 Select the latest version of the TeamTest package. To verify which version is required, see “Analyzing your current package version” on page 140. Click Next.

If the correct version is not present in the list, click **More Packages**. Click **OK** to return to the **Select a Package** list. Select the package and click **Next**.

- 5 To apply packages to a schema, select the schema to upgrade with this package. Click **Next**.
- 6 If record types are displayed in the **Setup Records Types for Packages** dialog box, do not check any of them. The Package Wizard will automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to install new packages. For more information on installing new packages and adding integrations, refer to *Administering Rational ClearQuest*. Click **Finish**.
- 7 From the ClearQuest Designer menu bar, select **File > Checkin** to check this new package into your schema. Click **OK** after verifying your choice. Click **OK** again in the ClearQuest Checkin Confirmation dialog box.
- 8 If you have finished upgrading your schema, apply the schema changes to your user database. See “Applying schema changes to user databases” on page 167.

## Upgrading RequisitePro integrations

The integration with Rational RequisitePro is maintained through the application of two separate packages, Repository and RequisitePro. With some previous releases of ClearQuest an additional package was also necessary, RequisitePro Supplement. With ClearQuest Release 2001, the RequisitePro Supplement Package is obsolete; it is superseded by RequisitePro 1.5.

The steps necessary to upgrade an existing integration to RequisitePro are dependent on which package versions are currently applied to your schema. To find out what versions are

applied to your schema refer to “Analyzing your current package version” on page 140.

**Note:** For more information on upgrades with earlier versions, refer to “Upgrading from ClearQuest version 1.1” on page 169.

The following table provides you with the package information to complete this procedure.

Package Name	Present?	Perform these steps...
RequisitePro Supplement	No	1. “Upgrading Rational Administrator integrations” on page 144. 2. Apply <b>RequisitePro 1.5</b> in step 4. 3. “Updating record types with a back reference” on page 158.
RequisitePro Supplement	Yes	1. “Upgrading Rational Administrator integrations” on page 144. 2. Apply <b>RequisitePro 1.5 Upgrade</b> in step 4.

**Warning:** The RequisitePro integration is dependent on upgrading both the Repository and Requisite packages. If you do not first upgrade the Repository package, the upgrade for RequisitePro package will fail.

To apply the Repository packages:

Follow the procedure in “Upgrading Rational Administrator integrations” on page 144 to upgrade your Repository packages.

To apply the RequisitePro packages:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 Click Cancel in the Open Schema dialog box.
- 3 In the ClearQuest Designer menu bar, select Package > Package Wizard.
- 4 Select the latest version of the package identified in the table above. Click Next.

If the correct version is not present in the list, click **More Packages**. Click **OK** to return to the **Select a Package** list. Select the package and click **Next**.

- 5** To apply packages to a schema, select the schema to upgrade with this package. Click **Next**.
- 6** If record types are displayed in the **Setup Records Types for Packages** dialog box, do not check any of them. The Package Wizard will automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to add new package integrations. For more information on installing new packages and adding integrations, refer to *Administering Rational ClearQuest*. Click **Finish**.
- 7** From the ClearQuest Designer menu bar, select **File > Checkin** to check this new package into your schema. Click **OK** after verifying your choice. Click **OK** again in the ClearQuest Checkin Confirmation dialog box.

### ***Updating record types with a back reference***

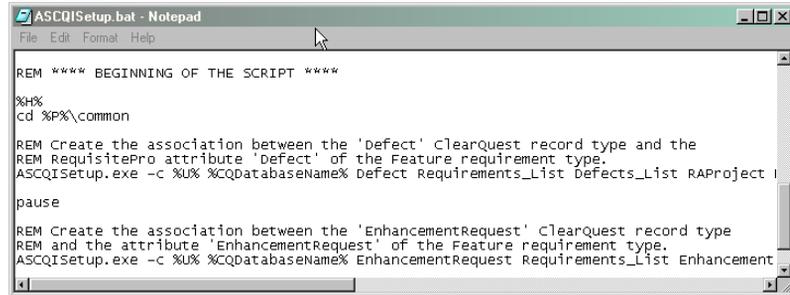
For every record type that you have applied the RequisitePro 1.5 package, you will need to locate the `Requirements_List` field and add a back-reference field to it.

### **Naming your back reference**

The name you apply to your back reference must be consistent with the name designated in the `ASCQISetup.bat` file located in:

```
DriveLetter:\[Rational Installation]\common
```

For example, if you look at the following portion of the ASCQISetup.bat file, you will see something like this:



```
ASCQISetup.bat - Notepad
File Edit Format Help

REM ***** BEGINNING OF THE SCRIPT *****
%*%
cd %P%\common

REM Create the association between the 'defect' ClearQuest record type and the
REM RequisitePro attribute 'Defect' of the Feature requirement type.
ASCQISetup.exe -c %U% %QdatabaseName% Defect Requirements_List Defects_List RASProject
pause

REM Create the association between the 'EnhancementRequest' ClearQuest record type
REM and the attribute 'EnhancementRequest' of the Feature requirement type.
ASCQISetup.exe -c %U% %QdatabaseName% EnhancementRequest Requirements_List Enhancement
```

The line starting with “ASCQISetup.exe” includes [Defect], [Requirements\_List], and [Defects\_List]. These are translated as follows:

Parameter	Description
Defect	ClearQuest record type
Requirements_List	The RequisitePro field added to the Defect record type
Defects_list	The name of the back reference field associated with the Requirements_List field of a Defect record.

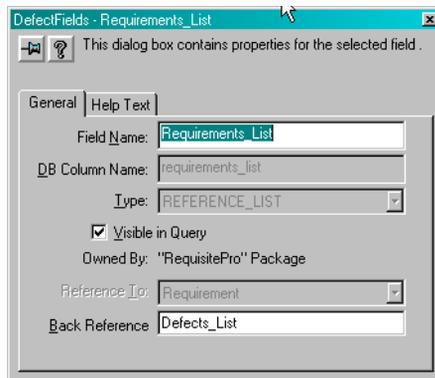
### Updating the back reference

The ClearQuest/RequisitePro integration requires a back-reference field on the Requirements\_List field for each of the record types you selected when you applied the RequisitePro package, such as Defect and EnhancementRequest.

To add a back reference field to your schema, do the following:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 In Open Schema dialog box select the schema that you have upgraded to either RequisitePro 1.5 or RequisitePro 1.5 Upgrade.

- 3 Click the radio button Checkout a schema to edit.... Click Next.
- 4 Enter the reason for this schema modification in the next screen. For this example the explanation is “Update back-reference fields for Requirements\_List field.” Click Finish.  
**Note:** If you are already in the ClearQuest Designer you can simply select File > Open Schema from the menu bar. It will guide you through the process defined in steps 2 and 3 above.
- 5 In the Workspace expand the Record Types folder for the record type with RequisitePro integration, and expand the Fields folder. The list of fields will be displayed in the right panel.
- 6 Right-click the Requirements\_List field name and select Field Properties. The Properties dialog box is displayed.
- 7 At the Back Reference field, enter the name you identified in “Naming your back reference” on page 158. It is possible that this field already contains a back reference. Verify that it is accurate and change it if it is not.



- 8 Close the properties dialog box.
- 9 Repeat steps 5 through 8 for each of the record types you selected when you applied the RequisitePro package. Each record should have an entry in the ASCQISetup.bat file. See “Naming your back reference” on page 158.

- 10 From the ClearQuest Designer menu bar, select File > Checkin to check these changes into your schema. Click OK after verifying your choice. Click OK again in the ClearQuest Checkin Confirmation dialog box.
- 11 If you have finished upgrading your schema, apply the schema changes to your user database. See “Applying schema changes to user databases” on page 167.

## **Upgrading Unified Change Management (UCM) integrations**

If you have an existing integration with UCM you will have to add packages in the following order.

- UCMPolicyScripts
- AMStateTypes
- UnifiedChangeManagement
- Optionally, BaseCMAActivity

### ***Applying the UCMPolicyScripts package***

To apply the UCMPolicyScripts:

- 1 In the ClearQuest Designer menu bar, select Package > Package Wizard.
- 2 Select the latest version of the UCMPolicyScripts package, see “Analyzing your current package version” on page 140. Click Next.

If the correct version is not present in the list, click More Packages. Click OK to return to the Select a Package list. Select the package and click Next.

- 3 To apply packages to a schema, select the schema to upgrade with this package. Click Next.
- 4 If record types are displayed in the Setup Records Types for Packages dialog box, do not check any of them. The Package Wizard will automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to add new package integrations. For more information on installing new packages

and adding integrations, refer to *Administering Rational ClearQuest*. Click Finish.

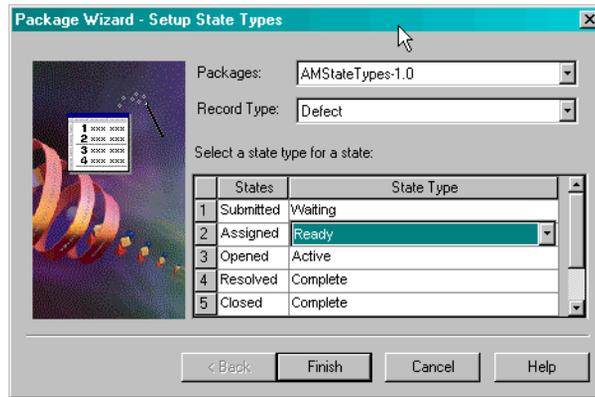
- 5 From the ClearQuest Designer menu bar, select File > Checkin to check this new package into your schema. Click OK after verifying your choice. Click OK again in the ClearQuest Checkin Confirmation dialog box.

### ***Applying the AMStateTypes package***

To apply the AMStateTypes Package:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 Click Cancel in the Open Schema dialog box.
- 3 In the ClearQuest Designer menu bar, select Package > Package Wizard.
- 4 Select the latest version of the latest AMStateTypes package, see “Analyzing your current package version” on page 140. Click Next.  
If the correct version is not present in the list, click More Packages. Click OK to return to the Select a Package list. Select the package and click Next.
- 5 To apply packages to a schema, select the schema to upgrade with this package. Click Next.
- 6 If record types are displayed in the Setup Record Types for Packages dialog box, do not check any of them. The Package Wizard will automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to add new package integrations. For more information on installing new packages and adding integrations, refer to *Administering Rational ClearQuest*. Click Finish.
- 7 Associate the AM State Types to the states that are defined in your system using the Setup State Types dialog box. For each of your

defined states, select an AM State Type from the pull down menus in the State Type column.



**Note:** For more information on mapping **State Types** refer to *Administering Rational ClearQuest*.

- 8 From the ClearQuest Designer menu bar, select File > Checkin to check this new package into your schema. Click OK after verifying your choice. Click OK again in the ClearQuest Checkin Confirmation dialog box.

### ***Applying the UnifiedChangeManagement package***

To apply the UnifiedChangeManagement Package:

- 1 In the ClearQuest Designer menu bar, select Package > Package Wizard.
- 2 Select the latest version of the UnifiedChangeManagement package, see "Analyzing your current package version" on page 140. Click Next.

If the correct version is not present in the list, click More Packages. Click OK to return to the Select a Package list. Select the package and click Next.

- 3 To apply packages to a schema, select the schema to upgrade with this package. Click Next.
- 4 If record types are displayed in the Setup Records Types for Packages dialog box, do not check any of them. The Package Wizard will

automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to install new packages. For more information on installing new packages and adding integrations, refer to *Administering Rational ClearQuest*. Click Finish.

- 5 From the ClearQuest Designer menu bar, select File > Checkin to check this new package into your schema. Click OK after verifying your choice. Click OK again in the ClearQuest Checkin Confirmation dialog box.
- 6 If you are through with your schema upgrades, apply the schema changes to your user database. See “Applying schema changes to user databases” on page 167.

### ***Applying BaseCMAActivity package***

You can upgrade your BaseCMAActivity package version if you have previously added this package to your schema. BaseCMAActivity adds a light weight activity record type to your schema. For more information on BaseCMAActivity see “Appendix A” in *Administering Rational ClearQuest*.

To upgrade your BaseCMAActivity package:

- 1 In the ClearQuest Designer menu bar, select Package > Package Wizard.
- 2 Select the latest version of the BaseCMAActivity package, see “Analyzing your current package version” on page 140. Click Next.  
  
If the correct version is not present in the list, click More Packages. Click OK to return to the Select a Package list. Select the package and click Next.
- 3 To apply packages to a schema, select the schema to upgrade with this package. Click Next.
- 4 If record types are displayed in the Setup Records Types for Packages dialog box, do not check any of them. The Package Wizard will automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to add new package

integrations. For more information on installing new packages and adding integrations, refer to *Administering Rational ClearQuest*. Click Finish.

- 5 From the ClearQuest Designer menu bar, select File > Checkin to check this new package into your schema. Click OK after verifying your choice. Click OK again in the ClearQuest Checkin Confirmation dialog box.
- 6 You should now upgrade your user database. See “Applying schema changes to user databases” on page 167.

### **Upgrading E-Mail notification**

To upgrade to the E-mail package do the following:

- 1 Log into ClearQuest Designer with Super User or Schema Designer privileges.
- 2 Click Cancel in the Open Schema dialog box.
- 3 In the ClearQuest Designer menu bar, select Package > Package Wizard.
- 4 Select the latest version of the E-Mail package, see “Analyzing your current package version” on page 140. Click Next.

If the correct version is not present in the list, click More Packages. Click OK to return to the Select a Package list. Select the package and click Next.

- 5 If record types are displayed in the Setup Records Types for Packages dialog box, do not check any of them. The Package Wizard will automatically apply the package to all the record types in your schema that have an earlier version of this package installed. This step is only required if you intend to add new package integrations. For more information on installing new packages and adding integrations, refer to *Administering Rational ClearQuest*. Click Finish.
- 6 From the ClearQuest Designer menu bar, select File > Checkin to check this new package into your schema. Click OK after verifying your choice. Click OK again in the ClearQuest Checkin Confirmation dialog box.

- 7** Apply the schema upgrades to your user databases. See “Applying schema changes to user databases” on page 167.
- 8** Verify that the E-Mail notification for each of your end users is enabled, see “Enabling E-mail notification for Windows end users” on page 66, “Enabling E-mail notification for web end users” on page 121, and “Enabling E-mail notification for UNIX end users” on page 92.

## Applying schema changes to user databases

**Warning:** This action cannot be reversed. Back up your schema repository and user databases. For back up procedures refer to your database vendor documentation.

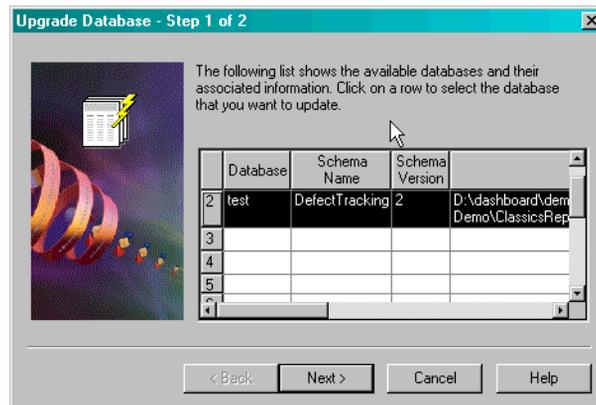
**Note:** Before updating your user databases, you should first perform a database upgrade on a test data base. For instructions on creating a test database, see “Working with test database” in *Administering Rational ClearQuest*.

To upgrade your user database integrations.

- 1 Log into your ClearQuest Designer with Super User or Designer privileges.
- 2 Select Database > Upgrade Database.

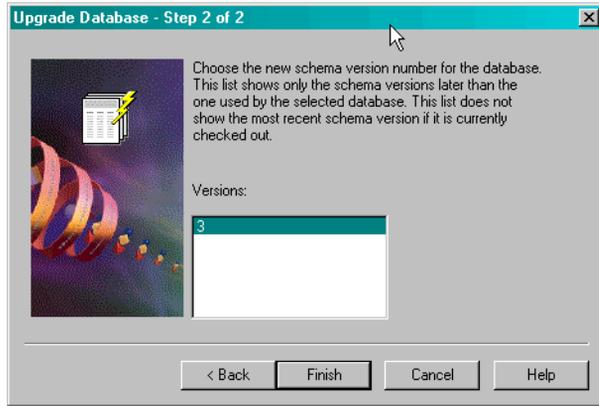
A message warns you that this action cannot be reversed, recommend that you backup your databases before proceeding and asks you if you want to continue. If you have backed up your databases, click Yes.

- 3 Select the user database from the list presented in the Upgrade Database wizard. Click Next.



- 4 Select the schema version from the list. If your most recent version is not shown in this list, it probably hasn't been checked in. In that

case, cancel this wizard. Open the schema from the File menu and check it in. Then re-start this process.



- 5 Click Finish. When the user database upgrade is completed a message will be displayed saying the database has been upgraded successfully.

## Upgrading from ClearQuest version 1.1

If you have applied any of the ClearQuest add-ins from version 1.1 to your schemas, you must use the Package Wizard to apply the equivalent upgrade packages to these schemas. For more information, see “Working with schema packages” in the ClearQuest Designer Help.

If you have integration with ClearCase, E-Mail, or Microsoft Visual SourceSafe and you are upgrading from ClearQuest release 1.1, you will have to perform the following upgrades before completing further upgrades.

Integration	Package Name	Upgrade to Version	Next Step
ClearCase	ClearCase	Upgrade 2.0	None
E-Mail	E-Mail	Upgrade 4.0	Install latest, see “Upgrading E-Mail notification” on page 165
Visual SourceSafe	Visual SourceSafe	Upgrade 2.0	None
TeamTest	TeamTest	1. Upgrade 0.1	4. Install latest, see “Upgrading TeamTest integrations” on page 155
	Repository	2. Upgrade 0.2	5. Install latest, see “Upgrading Rational Administrator integrations” on page 144
	Resolution	3. Upgrade 1.0	6. Install latest package, see “Upgrading packages” on page 143

## Upgrading feature levels

If you plan to use the new features available with the latest ClearQuest version (see the ClearQuest Release Notes for new features), or if you have a ClearQuest version prior to 2.0 currently installed, you will have to upgrade your databases.

ClearQuest now maintains backward compatibility making it possible for you to incrementally install the new ClearQuest release. However, prior to upgrading your schema repositories and user databases to the latest feature level, all ClearQuest end users must have the latest ClearQuest installation.

The following table depicts when a database upgrade is required.

Current Release version	Upgrade requirements	Downward Compatibility
1.0	Must upgrade to 2001A	1.0
1.1, and 1.1 Service Packs	Must upgrade to 2001A	1.1
2.0	Upgrade for new features	2.0
2000	Upgrade for new features	2.0
2001	Upgrade for new features	2.0 2000
2001A	New features are: <ul style="list-style-type: none"><li>• Security</li><li>• ClearQuest MultiSite</li></ul>	2.0 2000 2001

**Note:** If you are upgrading Oracle databases, you can speed up the upgrade process significantly by running the Oracle **ANALYZE** command. Refer to your Oracle documentation for detailed instructions.

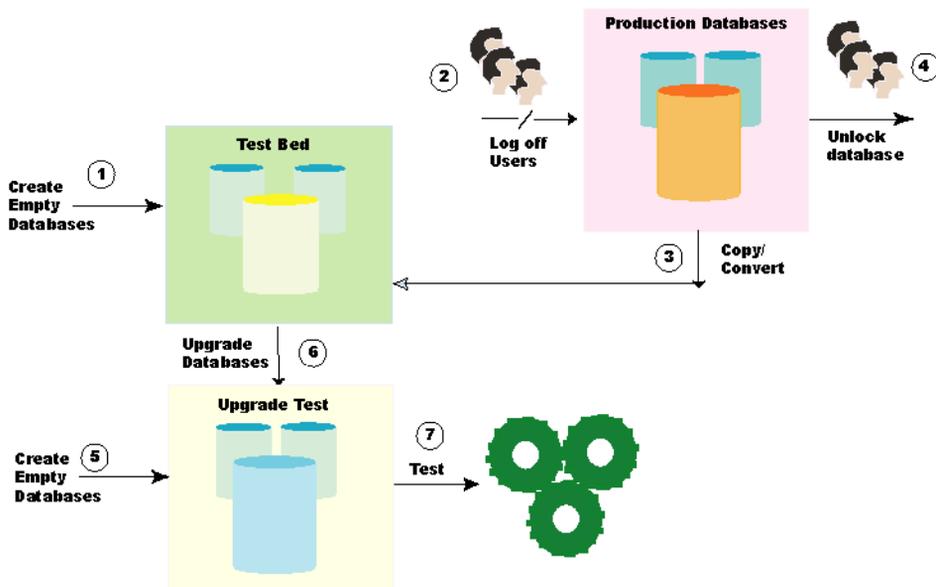
### Overview of feature level upgrade process

Because it is important to minimize your production system down time, we strongly recommend that you first perform the feature level upgrade on a test system. Here are the steps:

- 1 Perform a test upgrade.
  - a Create a test bed from a copy of your production databases.
  - b Create an upgrade database set for the test bed.
  - c Upgrade the test bed.
  - d Verify that the test upgrade was successful.
- 2 Upgrade the production databases.
  - a Create an upgrade database set for the production databases.
  - b Upgrade the production databases.
  - c Verify that the production upgrade was successful.
  - d Connect users to the new upgraded databases.

### Preparing your test bed

Because it is important to minimize your production system down time, we strongly recommend that you first perform the feature level upgrade on a test system. The feature level test upgrade process is represented in the following graphic.



- 1 Create a new empty database for each of your schema repositories and user databases. This set of databases will be referred to as the test bed. For information on creating vendor databases see:
  - “Setting up Microsoft Access” on page 12
  - “Setting up SQL Anywhere” on page 13
  - “Setting up Microsoft SQL Server 6.5” on page 17
  - “Setting up Microsoft SQL Server 7 and 2000” on page 22
  - “Setting up the Oracle Server” on page 28

**Warning:** Create empty databases only. Do not use your vendor database tools to move or copy the data.
- 2 Log off all of your users to ensure consistency of database snapshot.
- 3 Copy existing production schema repository and user databases to your test bed databases and establish connection to ClearQuest. Use the ClearQuest `installutil` utility with options `convertschemarepo` and `convertuserdb`. For detailed usage for these options refer to “Creating database copies” on page 179.
- 4 The convert options for `installutil` also locks the production database. To allow users to continue using the production database while you perform an upgrade on the test bed, you must unlock the production database. See “Unlocking databases” on page 178.
- 5 Create another new empty “upgrade” database for each of the databases in your test bed. See above. This set of databases will be referred to as the upgrade databases.
- 6 Launch the ClearQuest Maintenance Tool and begin the upgrade process. See “Upgrading your databases” on page 173.
- 7 Verify that the upgrade process was completed successfully.
  - Verify through the ClearQuest Maintenance Tool upgrade dialog box that the upgrade was completed successfully. Alternately, you can view the log file created and copy to your `\Temp` directory.

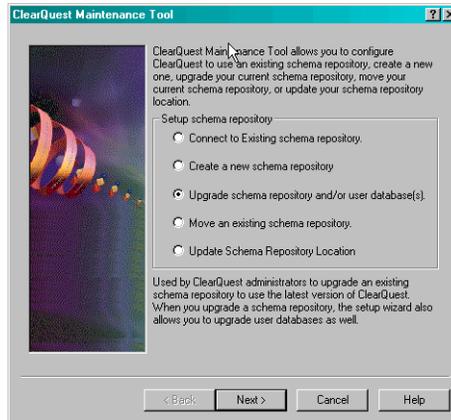
- Enter a few test records of each record type and move them though your entire state model to be sure the upgrade is working correctly.

## Upgrading your databases

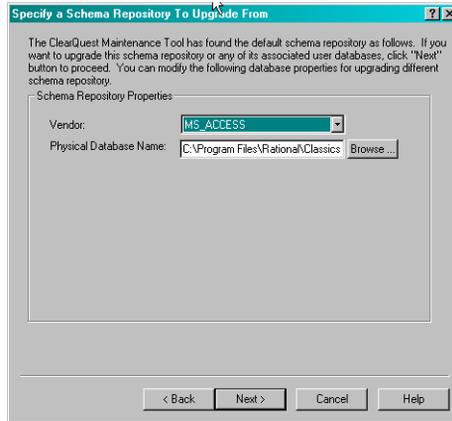
The upgrade steps are the same whether you are performing a test upgrade or the final production upgrade.

To perform an upgrade:

- 1 Launch the ClearQuest Maintenance Tool (Start > Programs > Rational > Rational ClearQuest > Rational ClearQuest Maintenance Tool).
- 2 Select the Upgrade schema repository and/or user database(s) and click Next.



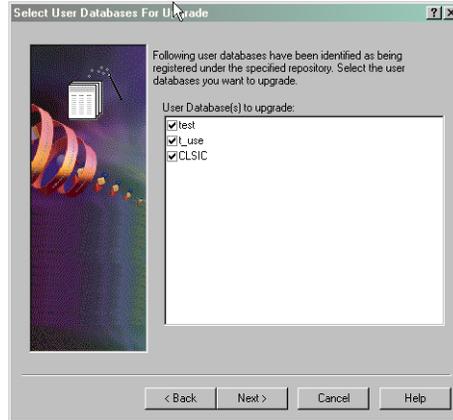
- 3 Specify the schema repository to upgrade, that is your test or production schema repository. Click Next.



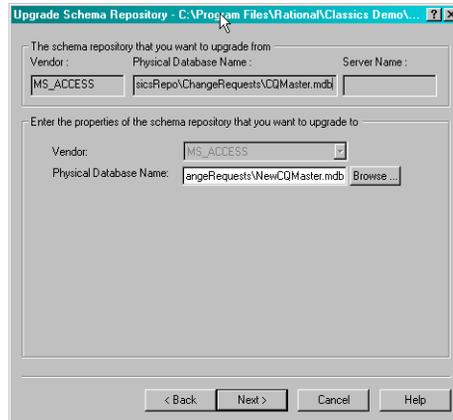
- 4 To upgrade databases associated with this schema repository, select the Upgrade user databases option and enter the ClearQuest login name and password for a ClearQuest user account with Super User privileges, then click Next.



- 5 The Select User Databases for Upgrade dialog box will display the list of each of the user databases that you have associated with this schema repository. Select any or all of the listed user databases.

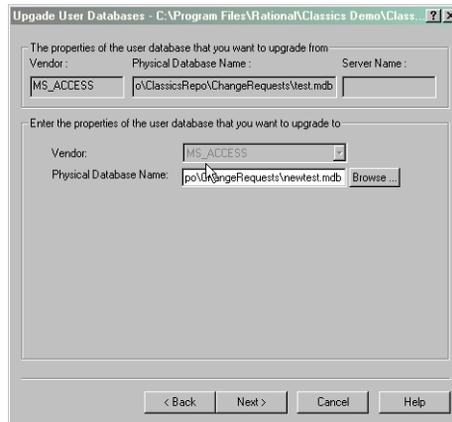


- 6 The next dialog box will display the name of the schema repository that you are upgrading. Enter the new **upgrade** schema repository (the new, empty database you created), then click Next.



- 7 For each of the user databases you selected in Step 4 on page 174, the Maintenance Tool will provide you with the following dialog box. Enter the new upgrade user database name and location, and click Next.

Repeat this process until all of the user databases you specified are associated with a new upgrade database. Click Finish.



ClearQuest upgrades your schema repository and displays notification to the screen of each process as it is performed. Additionally, all the actions are written to a text file in your \Temp directory.

- 8 Verify that the upgrade process was completed successfully.
  - Verify that through the ClearQuest Maintenance Tool upgrade dialog box that the upgrade was completed successfully. Alternately, you can view the log file created and copy to your \Temp directory.
  - Enter a few test records and move them though your entire state model to be sure the upgrade is working correctly.
- 9 Do one of the following depending on what databases you are upgrading:
  - If this completes your test bed upgrade process, proceed to “Preparing your production databases” on page 177.
  - If this completes your production database upgrade, inform users of the new connection information.

## Preparing your production databases

After you have verified that the test upgrade was successful, perform the following steps on your production databases.

**Note:** You may discard your test bed and test upgrade databases after completion of the validation process.

- 1 Create a new empty database for each of your schema repositories and user databases. For information on creating vendor databases see:
  - “Setting up Microsoft Access” on page 12
  - “Setting up SQL Anywhere” on page 13
  - “Setting up Microsoft SQL Server 6.5” on page 17
  - “Setting up Microsoft SQL Server 7 and 2000” on page 22
  - “Setting up the Oracle Server” on page 28

**Warning:** Create empty databases only. Do not use your vendor database tools to move or copy the data. ClearQuest updates the data structure and moves it into the new databases as part of the upgrade process.

- 2 Log off all of your users.
- 3 Launch the ClearQuest Maintenance Tool and begin the upgrade process. See “Upgrading your databases” on page 173.

## Some helpful utilities

### Unlocking databases

When you create database copies using the `installutil`, the `convertschemarepo` option locks your production database prior to copying it to your test-bed. If you want to allow users to continue using your original databases while you test the upgrade, you must unlock the database.

**Note:** After you perform the final upgrade, do not unlock your original databases. Keeping the original databases locked prevents your users from accessing the wrong databases.

- 1 Start a command window (“DOS prompt”).
- 2 To unlock the schema repository, enter the following command at the command line for your vendor database:

```
installutil unlockschemarepo <db_vendor> <server>  
<database> <dbo_login> <dbo_password> ""
```

where:

Variable	Access	SQL Anywhere	MS SQL	Oracle	DB2
db_vendor	MS_ACCESS	SQL_ANYWHERE	SQL_SERVER	ORACLE	DB2
server	"" (Empty String)	database server name	host name	SQL*Net alias	not required
database	full path to the schema repository database	full path to the schema repository database	schema repository database name	schema repository database name	schema repository database alias
dbo_login	admin	admin	db owner user name	db owner user name	db owner user name
dbo_password	admin	admin	db owner password	db owner password	db owner password
connect_options	""	""	""	HOST=host SID= sid	""

- 3 To unlock user databases, repeat the above steps with the following exceptions:
  - the *installutil* subcommand to use is *unlockuserdb* instead of *unlockscemarepo*
  - point to the vendor database containing the original user database, not the schema repository

### Creating database copies

To copy your schema repository and create a sample database for testing the upgrade process use the *installutil* command line utility with the *convertscemarepo* option. This option will:

- copy the original database to a new database,
- connect ClearQuest to the database copy, and
- lock the original database.

**Note:** Before executing this command, perform a database backup and create new database(s) using your database vendor tools.

To create a copy of your databases to test the upgrade process in an off line environment:

- 1 Create new test databases following the instructions for your vendor in “Configuring vendor databases” on page 9.
- 2 Use the *installutil convertscemarepo* to copy your existing schema repository and connect it to ClearQuest. See “Sample data by vendor type” on page 181 for sample input parameters by vendor type.
- 3 Use the *installutil convertuserdb* to copy each of your existing user databases and connect them to ClearQuest. See “Sample data by vendor type” on page 181 for sample input parameters by vendor type.

## ***installutil convertschemarepo***

### **Syntax:**

```
installutil convertschemarepo <cq_login> <cq_password>  
<to_db_vendor> <to_database> <to_dbo_login>  
<to_dbo_password> <to_rw_login> <to_rw_password>  
<to_ro_login> <to_connect_options>  
[tcpip,ipx,netbios,namedpipes] [host1,host2,...]
```

## ***installutil convertuserdb***

### **Syntax:**

```
installutil convertuserdb <cq_login> <cq_password>  
<to_db_vendor> <to_database> <to_dbo_login>  
<to_dbo_password> <to_rw_login> <to_rw_password>  
<to_ro_login> <to_connect_options>  
[tcpip,ipx,netbios,namedpipes] [host1,host2,...]
```

### **Where**

<b>Parameter</b>	<b>Description</b>
cq_login	The user login name to ClearQuest databases that you want to copy. The user must have Super User privileges.
cq_password	The user login password to ClearQuest that has Super User privileges.
to_db_vendor	The new upgrade database vendor name. Available choices are MS_ACCESS, SQL_ANYWHERE, SQL_SERVER, ORACLE, DB2.
to_server	The new upgrade database server name
to_database	The new upgrade database name
to_dbo_login	A String containing the new empty database owner's login name.
to_dbo_password	A String containing the new empty database owner's login password.
to_rw_login	A String containing the empty database read/write login name.
to_rw_password	A String containing the new empty database read/write login password.

Parameter	Description
to_ro_login	A String containing the new empty database read only login name.
to_ro_password	A String containing the new empty database read only login name.
to_connect_options	This is only required for Oracle where the parameters are: (HOST=host;SID=sid; server_ver=server_version_number; client_ver=client_version_number)
[tcpip,ipx,netbios,named pipes]	These are optional parameters for specifying networks
[host1,host2,...]	These are optional parameters for identifying multiple host machines.

### **Sample data by vendor type**

The following table provides example command line input parameters by database type.

Parameter	Access	SQL Anywhere	MS SQL	Oracle	DB2
db_vendor	MS_ACCESS	SQL_ANYWHERE	SQL_SERVER	ORACLE	DB2
server	"" (Empty String)	database server name	host name	SQL*Net alias	not required
database	full path to the schema repository database	full path to the schema repository database	schema repository database name	schema repository database name	schema repository database alias
dbo_login	admin	admin	db owner user name	db owner user name	db owner user name
dbo_password	admin	admin	db owner password	db owner password	db owner password
rw_login	admin	admin	read/write owner user name	read/write owner user name	db owner user name

Parameter	Access	SQL Anywhere	MS SQL	Oracle	DB2
rw_password	admin	admin	read/write owner password	read/write owner password	db owner password
ro_login	admin	admin	read only owner user name	read only owner user name	db owner user name
ro_password	admin	admin	read only owner password	read only owner password	db owner password
connect_options	""	""	""	HOST=host SID= sid SERVER_VER=8.0 CLIENT_VER=7.0	""

### Viewing package versions with package\_upgrade\_info.bat

The `package_upgrade_info.bat` is a command line utility. It evaluates the schema associated with a specified user database and reports the package versions and installation sequence to upgrade your schema to the latest release. After performing the package upgrades and applying the upgrades to your user databases, we recommend that you run this utility again to verify that every package and integration is at the latest version.

**Note:** This utility evaluates your ClearQuest user databases. make sure that you have applied all your schema changes to the user database(s) before launching this utility. See “Applying schema changes to user databases” on page 167.

#### Syntax

```
package_upgrade_info <user id> <password> <user database>
[<schema_repo>]
```

Parameters	Description
-help	Display this help message.
user id	Any valid ClearQuest user id.

Parameters	Description
password	The ClearQuest user's password.
user database	The name of the ClearQuest user database to that you will be upgrading.
[schema_repo]	Your ClearQuest schema repository or master database name that is associated with the above user database. If this parameter is empty, the default schema repository currently connected to your ClearQuest Designer is used.

## Troubleshooting Tips

**Warning:** Your database upgrade will fail if any of the following conditions apply:

- 1 You currently have a ClearQuest schema checked out.

**Solution:** Check in your ClearQuest schema.

- 2 You currently have your ClearQuest database locked.

**Solution:** Unlock your database. For instructions on how to unlock your database, see “Unlocking databases” on page 178.

- 3 You have customized your schema to include Record Types or fields that have a **ratl\_** prefix. The prefix **ratl\_** is a system owned prefix name for both record type and field names; you will no longer be able to create using this as a prefix.

**Solution:** Contact Rational Technical Support. They will walk you through the process to correct this condition.



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