

**Version 2003.06.00 and later**  
Windows and UNIX



## Administrator's Guide



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Windows and UNIX



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**Note**

Before using this information and the product it supports, read the information in "Notices," on page 49.

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## Preface

Rational ClearQuest is a highly flexible defect-and-change-tracking system that captures and tracks all types of change, for any type of project.

New Rational ClearQuest Web is a feature of Rational ClearQuest that provides access to Rational ClearQuest repositories through a Web-based interface.

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## About This Manual

This manual provides requirements and instructions for administering the New Rational ClearQuest Web. The procedures and requirements for performing administrative tasks for Rational ClearQuest are covered in the *Administrator's Guide* for Rational ClearQuest.

This manual is intended for database, system, and Web server administrators who are responsible for the administration of New Rational ClearQuest Web. All users must have experience with the Microsoft Windows operating system, the UNIX operating system (if your ClearQuest configuration includes UNIX servers and/or clients), system and database administration and Web server administration.

## Other Resources

For information about installing and configuring ClearQuest Web, see the *Installation Guide* for New Rational ClearQuest Web.

All Rational Suite manuals, including the *Administrator's Guide* for Rational ClearQuest, are available online in PDF format. The online manuals are on the Rational Solutions for Windows Online Documentation CD provided with Rational Suite, version 2003.6.00.

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## Typographical conventions

This manual uses the following typographical conventions:

- *ccase-home-dir* represents the directory into which the ClearCase Product Family has been installed. By default, this directory is */opt/rational/clearcase* on UNIX and *C:\Program Files\Rational\ClearCase* on Windows.
- *cquest-home-dir* represents the directory into which Rational ClearQuest has been installed. By default, this directory is */opt/rational/clearquest* on UNIX and *C:\Program Files\Rational\ClearQuest* on Windows.
- **Bold** is used for names the user can enter; for example, command names and branch names.
- *A sans-serif font* is used for file names, directory names, and file extensions.
- **A sans-serif bold font** is used for GUI elements; for example, menu names and names of check boxes.
- *Italic* is used for variables, document titles, glossary terms, and emphasis.
- A monospaced font is used for examples. Where user input needs to be distinguished from program output, **bold** is used for user input.
- Nonprinting characters appear as follows: <EOF>, <NL>.
- Key names and key combinations are capitalized and appear as follows: SHIFT, CTRL+G.

- [ ] Brackets enclose optional items in format and syntax descriptions.
- { } Braces enclose a list from which you must choose an item in format and syntax descriptions.
- | A vertical bar separates items in a list of choices.
- ... In a syntax description, an ellipsis indicates you can repeat the preceding item or line one or more times. Otherwise, it can indicate omitted information.

**Note:** In certain contexts, you can use “...” within a pathname as a wildcard, similar to “\*” or “?”. For more information, see the **wildcards\_ccase** reference page.

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

**lsc/heckout**

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## Contacting IBM Rational Customer Support

If you have questions about installing, using, or maintaining this product, contact IBM Rational Customer Support as follows:

The IBM software support Internet site provides you with self-help resources and electronic problem submission. The IBM Rational Software Support Home page can be found at <http://www.ibm.com/software/rational/support/>.

Voice Support is available to all current contract holders by dialing a telephone number in your country (where available). For specific country phone numbers, go to <http://www.ibm.com/planetwide/>.

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

- Your name, company name, ICN number, telephone number, and e-mail address
- Your operating system, version number, and any service packs or patches you have applied
- Product name and release number
- Your PMR number (if you are following up on a previously reported problem)

---

## Chapter 1. Server Architecture

New Rational ClearQuest Web consists of two components:

- ClearQuest Web application
- ClearQuest server

IBM recommends that you start with a simple configuration that uses a single computer for both the ClearQuest Web application and ClearQuest server components. Additional ClearQuest server computers can be added to provide greater transaction load capacity. For more information about multiple server configurations, see the *Installation Guide* for New Rational ClearQuest Web.

If multiple ClearQuest servers support the ClearQuest Web application, the processing load can be balanced across them. The ClearQuest Web application examines the number of ClearQuest sessions that are running on the various servers and distributes New ClearQuest Web requests to the server with the lowest current request load. If one ClearQuest server goes down, all subsequent requests for the new sessions are sent to one of the other available servers.

If you are deploying New ClearQuest Web on UNIX and want to provide reporting capabilities to your New ClearQuest Web application, you must configure at least one Windows computer to run the ClearQuest server. (Reporting is not supported on UNIX servers for New ClearQuest Web.)

This chapter describes the configuration steps required to implement the New ClearQuest Web architecture on multiple servers.

---

### Single-Server Architecture

Typically, a single-server architecture is configured as shown in Figure 1.

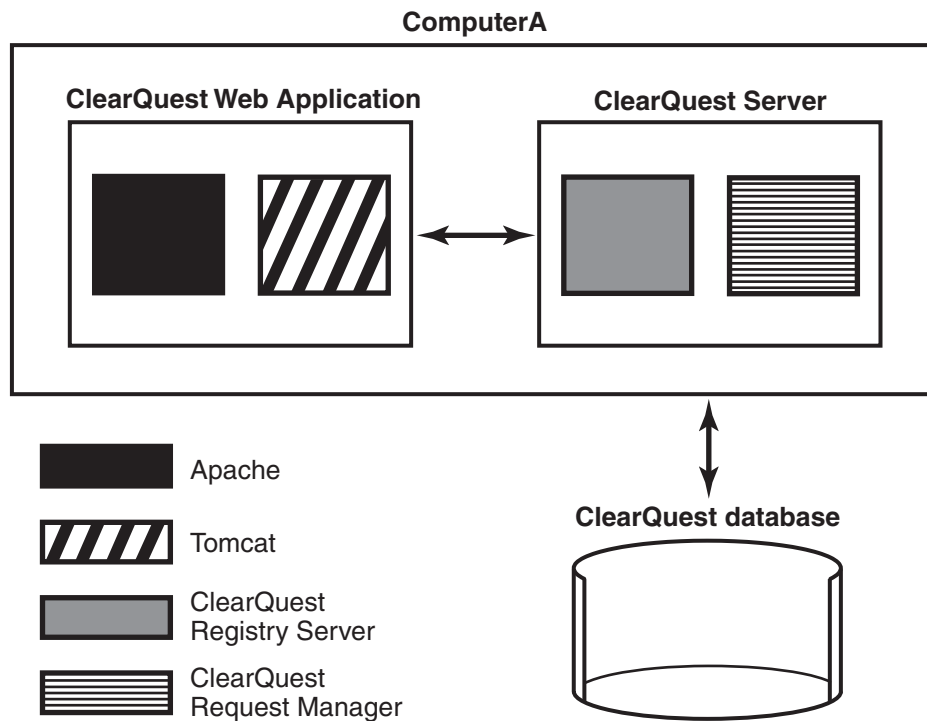


Figure 1. Single-Computer Architecture (ComputerA)

One computer, ComputerA, has all components of New ClearQuest Web installed, and has a connection to a ClearQuest database configured.

## Multiple-Computer Architectures

Typically, to improve performance you can split the ClearQuest server onto one or more different computers from the one running the ClearQuest Web application, as shown in Figure 2.

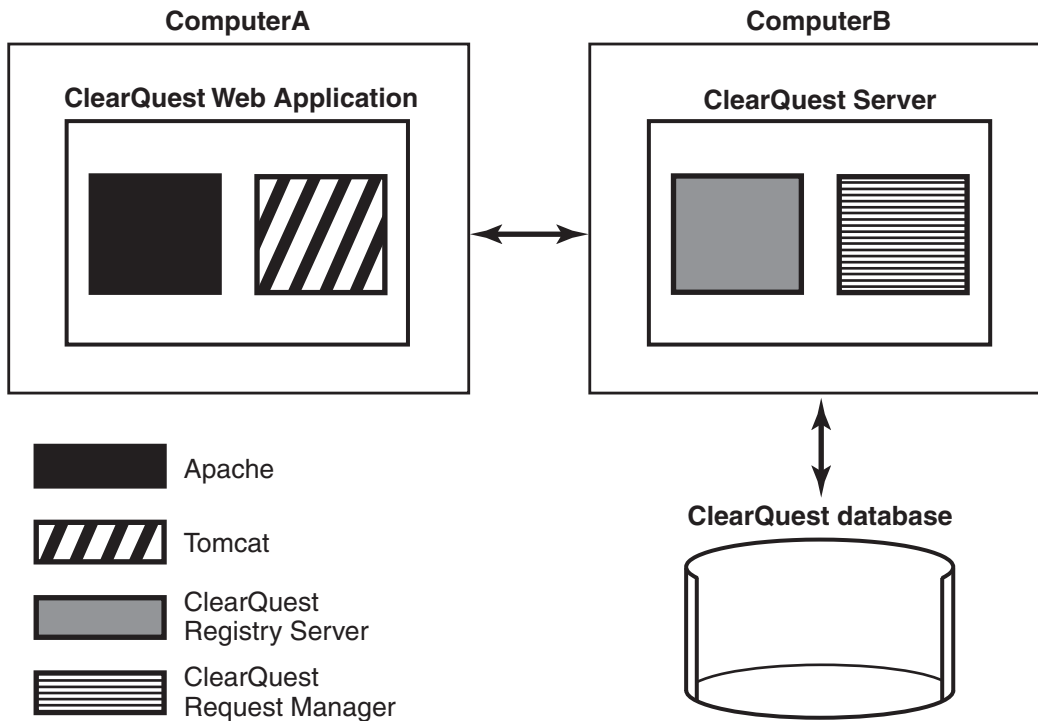


Figure 2. Two-Computer Architecture (ComputerA and ComputerB)

In this configuration, the first computer, ComputerA, is running the ClearQuest Web application and a second computer, ComputerB, is running the ClearQuest server components (the ClearQuest registry server and ClearQuest request manager).

To further increase your server capacity, you could add a third computer, ComputerC, also running the ClearQuest server components. This third computer would be configured like ComputerB in that it would have the ClearQuest server components installed and would have a connection to the same ClearQuest databases. For details about this configuration, see Figure 3.

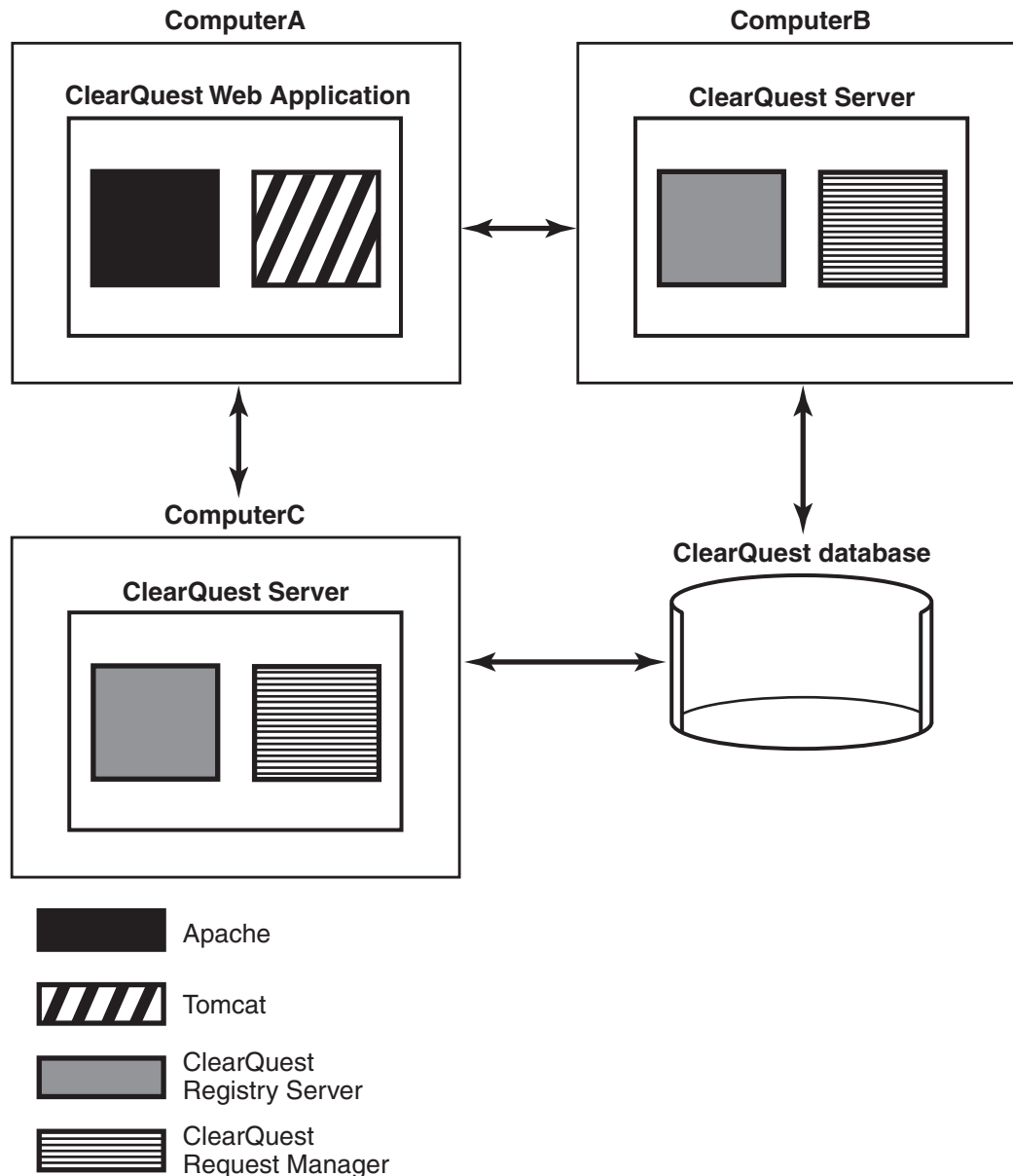


Figure 3. Three-Computer Architecture (with Two Servers)

In this configuration:

- The first computer, ComputerA, is running the ClearQuest Web application.
- A second computer, ComputerB, is running the ClearQuest server components (ClearQuest registry server and ClearQuest request manager).
- A third computer, ComputerC, is also running the ClearQuest server components.

## Configuring the ClearQuest Server Properties

All ClearQuest request manager components must be configured to register with the ClearQuest registry servers running on all servers. These steps ensure that when one of the servers is unavailable, all subsequent requests are routed to another server.

This section explains how to configure the environment shown in Figure 3.

- ComputerA is running only the ClearQuest Web application.
- ComputerB is running only the ClearQuest server (which consists of the ClearQuest registry server and ClearQuest request manager). ComputerB is not running the ClearQuest Web application.
- ComputerC is running only the ClearQuest server.
- The ClearQuest servers on both ComputerB and ComputerC are connected to the same ClearQuest database.

## Configuring the ClearQuest Request Manager Properties on the First Server Computer

By default, the ClearQuest request manager on ComputerB is configured to register only with the ClearQuest registry server running on itself.

To enable the request manager on ComputerB to register itself with ClearQuest registry servers running on other computers, edit its `jtl.properties` file, specifying the registry servers on the other computers:

1. On ComputerB, edit the `jtl.properties` file.

On Windows

```
C:\Program  
Files\Rational\ClearQuest\cqweb\cqserver\config\jtl.properties
```

On UNIX

```
/opt/rational/clearquest/cqweb/cqserver/config/jtl.properties
```

2. Set the value of the `JTLRMIREGISTRYSERVERS` property. If the first ClearQuest server (ComputerB) was named **mickey** and second server (ComputerC) was named **minnie**, you would set the value as follows:

```
JTLRMIREGISTRYSERVERS=mickey:1130,minnie:1130
```

**Note:** By default, the `jtl.properties` file represents its own name as `localhost`. To avoid confusion, specify all computers explicitly. (That is, replace the `localhost` specification with the actual computer name or static IP address.)

3. Save the properties file.

## Configuring the ClearQuest Request Manager Properties on the Second Server Computer

Now you must configure the request manager on the second ClearQuest server, **minnie**, to register itself with the ClearQuest registry servers running on both computers:

1. On minnie, edit the `jtl.properties` file.

On Windows

```
C:\Program  
Files\Rational\ClearQuest\cqweb\cqserver\config\jtl.properties
```

On UNIX

```
/opt/rational/clearquest/cqweb/cqserver/config/jtl.properties
```

2. Set the value of the `JTLRMIREGISTRYSERVERS` property as follows:

```
JTLRMIREGISTRYSERVERS=mickey:1130,minnie:1130
```

where **mickey** and **minnie** are the names of the two ClearQuest servers (represented by ComputerB and ComputerC in the multiple server architecture displayed in Figure 3 on page 4).

3. Save the properties file.

---

## Configuring the ClearQuest Web Application Properties

By default, the ClearQuest Web application is configured to access a ClearQuest registry server running on itself. That is, `JTLRMIREGISTRYSERVERS=localhost:1130` is specified.

If you want the ClearQuest Web application to use ClearQuest server components running on other computers (for example, to support load balancing and redundant servers), you must modify the `jtl.properties` file for the ClearQuest Web application (under the Rational Web Platform installation directory):

1. On ComputerA, which is running the ClearQuest Web application, open the `jtl.properties` file.

On Windows

`C:\Program Files\Common\rwp\webapps\cqweb\WEB-INF\classes\jtl.properties`

On UNIX

`/opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes/jtl.properties`

2. Set the value of the `JTLRMIREGISTRYSERVERS` property as follows:

`JTLRMIREGISTRYSERVERS=mickey:1130,minnie:1130`

where `mickey` and `minnie` are the names of the two ClearQuest servers (represented by ComputerB and ComputerC in the multiple server architecture displayed in Figure 3 on page 4).

The order of the ClearQuest registry server components specified here is the same as that specified for the ClearQuest servers as described under “Configuring the ClearQuest Server Properties” on page 4.

This change allows the ClearQuest Web application to route requests to **minnie** if the request manager is down on **mickey**.

3. Save the properties file.

In our example, only ComputerA is running the ClearQuest Web application, while both server computers are running only the ClearQuest server components.

---

## Restart All ClearQuest Web Services

To activate the configuration changes described in this section, restart all New ClearQuest Web and Rational Web Platform services on all client and server computers.

For details, see Chapter 2, “Starting and Stopping New ClearQuest Web,” on page 7.

---

## Chapter 2. Starting and Stopping New ClearQuest Web

You can control the components in New ClearQuest Web by using either the Services application in the Windows Control Panel or the IBM Rational Web Platform (RWP) startup and shutdown scripts in the IBM Rational Web Platform /bin directory on UNIX.

The information in this chapter assumes that you have installed the New ClearQuest Web components to the default filesystem locations for the appropriate platform (that is, C:\Program Files\Rational on Windows or /opt/rational on UNIX). If you have installed to a different location, change the path in the instructions as appropriate.

---

### Services Used on Windows

This section describes the services that are installed and started when you install New ClearQuest Web on computers that run Microsoft Windows.

To stop or start these services, you can use the Services application in the Windows Control Panel.

### ClearQuest Web Application Services

When you install the New ClearQuest Web application component on a Windows host, three services are created and started on that computer as shown in Table 1. All three services must be running for the ClearQuest Web application to work properly. .

*Table 1. ClearQuest Web Application Services on Windows*

Service	Processes	Additional information
Rational Web Platform, HTTP server	<ul style="list-style-type: none"><li>• rwp.exe</li><li>• rotatlogs.exe</li></ul>	There are two rwp.exe processes for fault tolerance; one is master, one is worker. If the worker process dies, the master starts up a new one. There are four rotatlogs.exe processes that are started by the two rwp.exe processes (two each) to handle log rotation. For more information, see “Log rotation and log cleanup” on page 42.
Rational Web Platform, servlet engine	<ul style="list-style-type: none"><li>• java.exe</li><li>• jk_nt_service.exe<sup>1</sup></li></ul>	The properties file that controls this Java processes is jk_service.properties.
Rational Web Platform, ReqWeb servlet engine	<ul style="list-style-type: none"><li>• java.exe</li><li>• jk_nt_service.exe</li></ul>	This service is not used by New ClearQuest Web.
<b>Notes:</b> 1. Java programs cannot run directly as Windows services; they must be wrapped in a native program that runs the java.exe process as a subprocess. jk_nt_service.exe is a wrapper for java.exe.		

## Ports Used by the ClearQuest Web Application

The ClearQuest Web application services use the ports defined in the `jtl.properties` file, as specified in these parameters:

- `JTLRMIREGISTRYSERVERS` (1130, not user configurable)
- `JTLRMICALLBACKPORTS` (by default, 1140 and 1142)
- `JTLRMICALLBACKFILESERVERPORTS` (by default, 1141 and 1143)

The ClearQuest Web application runs on the IBM Rational Web Platform (commonly called RWP), which uses port 80 by default.

For more information about...	See this chapter or section:
Ports used by the ClearQuest Web application (and other components of New ClearQuest Web)	Chapter 5, "Ports Used by New ClearQuest Web," on page 27
Customizing the default port assignments using <code>jtl.properties</code> files	"Customizing the <code>jtl.properties</code> File" on page 18
Ports used by the IBM Rational Web Platform	Chapter 8, "Configuring the IBM Rational Web Platform," on page 39

## ClearQuest Server Services

When you install the ClearQuest server component on a Windows host, two services are created and started on that computer as shown in Table 2. Both services must be running for the ClearQuest server to work properly.

*Table 2. ClearQuest Server Services on Windows*

Service	Processes	Additional information
Rational ClearQuest Request Manager	<ul style="list-style-type: none"><li>• <code>java.exe</code></li><li>• <code>jk_nt_service.exe</code><sup>1</sup></li><li>• <code>requestmgr.exe</code></li></ul>	The properties file that controls this Java processes is <code>jk_service.properties</code> .
Rational ClearQuest Registry Server	<ul style="list-style-type: none"><li>• <code>java.exe</code></li><li>• <code>cqregsvr.exe</code><sup>2</sup></li></ul>	None.
<b>Notes:</b> <ol style="list-style-type: none"><li>1. Java programs cannot run directly as Windows services; they must be wrapped in a native program that runs the <code>java.exe</code> process as a subprocess. <code>jk_nt_service.exe</code> is a wrapper for <code>java.exe</code>.</li><li>2. <code>cqregsvr.exe</code> is a wrapper for <code>java.exe</code></li></ol>		

## Ports Used by the ClearQuest Server Services

The registry server component of the ClearQuest server uses port 1130, as specified in the `JTLRMIREGISTRYSERVERS` parameter in the `jtl.properties` file. This port specification is not user configurable and should not be changed in the `jtl.properties` file.

The request manager component of the ClearQuest server uses ports specified in the `jtl.properties` file, as specified in these parameters:

- `JTLRMISERVICEPORT` (by default, 1132)

- JTLRMISERVERFILESERVERPORTS (by default, 1133)

For more information about...	See this chapter or section:
Ports used by the ClearQuest server (and all other components of New ClearQuest Web)	Chapter 5, "Ports Used by New ClearQuest Web," on page 27
Customizing the default port assignments using <code>jtl.properties</code> files	"Customizing the <code>jtl.properties</code> File" on page 18

## Services Used on UNIX

This section describes the processes that are installed and started when you install New ClearQuest Web on computers running UNIX.

### ClearQuest Web Application

On UNIX computers where the ClearQuest Web application component is installed, you can control the ClearQuest Web application by using the Rational Web Platform startup and shutdown scripts in the directory `/opt/rational/common/rwp/bin`.

<b>rwp_startup</b>	Starts RWP if it is not already running
<b>rwp_shutdown</b>	Stops RWP and any associated servlet engine processes
<b>rwp_restart</b>	Runs the <b>rwp_shutdown</b> and <b>rwp_startup</b> commands, in that order, to restart RWP

**Attention:** When stopping RWP on UNIX, always use the shutdown scripts. Do not attempt to kill the processes to stop RWP.

On UNIX, continuously running processes are started as daemons by the operating system. (These daemons correspond to services in the Windows environment.) No wrappers are needed for the Java processes. RWP starts only one Tomcat instance (one Java process) to handle New ClearQuest Web. The separate Java process for the ClearQuest Web application is not started on UNIX.

When you install the ClearQuest Web application component on a UNIX host, two daemons are created and started on that computer as shown in Table 3.

Table 3. ClearQuest Web Application Processes on UNIX

UNIX daemon	Processes	Additional information
Rational Web Platform, HTTP server	<code>/opt/rational/common/rwp/bin/rwp</code>	On UNIX, the <code>rwp</code> processes are (collectively) one instance of Apache. Apache consists of one master process and several worker processes (instead of one master and one multi-threaded worker as on Windows). You can tune the number of worker <code>rwp</code> processes by editing the <code>rwp.conf</code> file. (See the comments in <code>rwp.conf</code> for instructions.)The master <code>rwp</code> process starts two <code>rotatelog</code> s processes to handle log rotation. For more information, see "Log rotation and log cleanup" on page 42.
Rational Web Platform, servlet engine	<code>/opt/rational/common/java/bin/..bin/arch/native_threads/java -Xms16m -Xmx256</code>	<code>arch</code> represents the architecture (for example, <code>sun5</code> ).

The ports used by these services are the same as for Windows. For details, see “Ports Used by the ClearQuest Web Application” on page 8.

## ClearQuest Server Services

You can start and stop the ClearQuest server process by using shell scripts in `/opt/rational/clearquest/cqweb`.

<b>cqserver_shutdown</b>	Stops the ClearQuest server
<b>cqserver_startup</b>	Starts the ClearQuest server (in the background)
<b>cqserver_restart</b>	Stops and restarts the ClearQuest server (in the background)

The ClearQuest server process includes the ClearQuest registry server and ClearQuest request manager.

**Attention:** When stopping ClearQuest server on UNIX, always use the shutdown scripts. Do not attempt to kill the processes to stop ClearQuest server.

When you install the ClearQuest server components on a UNIX host, two daemons are created and started on that computer as shown in Table 4.

*Table 4. ClearQuest Server Services on UNIX*

UNIX Service	Processes
Rational ClearQuest Request Manager	<code>/opt/rational/common/java/bin/../../bin/arch/native_threads/com.rational.clearquest.cqweb.requestmgr.RmInitialization</code>
Rational ClearQuest Registry Server	<code>/opt/rational/common/java/bin/../../bin/arch/native_threads/com.rational.clearquest.cqweb.jtl.JTLRegistryServer</code>

These UNIX services use the same ports that are used on Windows. For details, see “Ports Used by the ClearQuest Server Services” on page 8.

---

## ClearQuest Component Startup Sequences

This section describes the sequence of events that occur when the ClearQuest server and ClearQuest Web application start.

### ClearQuest Server Startup Sequence

When the ClearQuest server starts:

1. The ClearQuest registry server starts and listens on port 1130 for the registration requests from the ClearQuest request managers.
2. The ClearQuest request manager starts and obtains a list of the ClearQuest registry servers, as specified in the `JTLRMIREGISTRYSERVERS` property in the `jtl.properties` file.

#### On Windows

`C:\Program Files\Rational\ClearQuest\cqweb\cqserver\config\jtl.properties`

#### On UNIX

`/opt/rational/clearquest/cqweb/cqserver/config/jtl.properties`

**Note:** To define this list of servers, follow the process described in Chapter 1, “Server Architecture,” on page 1.

3. The ClearQuest request manger registers itself with each ClearQuest registry server specified in the comma-separated list.
4. The ClearQuest request manager is ready to receive requests from the ClearQuest Web application.

## ClearQuest Web Application Startup Sequence

When the ClearQuest Web application starts:

1. Rational Web Platform (RWP) starts and then starts the ClearQuest Web application.
2. The ClearQuest Web application obtains the list of the available ClearQuest registry servers, as specified in the JTLRMIREGISTRYSERVERS property in the `jtl.properties` file.

### On Windows

`C:\Program Files\Rational\Common\rwp\webapps\cqweb\WEB-INF\classes\jtl.properties`

### On UNIX

`/opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes/jtl.properties`

**Note:** To define this list of servers, follow the process described in Chapter 1, “Server Architecture,” on page 1.

3. The ClearQuest Web application sends a lookup request to the first ClearQuest registry server in the list obtained from the `jtl.properties` file, to obtain a list of the available ClearQuest request managers.

If the first registry server in the list is not available, the ClearQuest Web application sends a lookup request to the second registry server in the list, and so on.

4. After the ClearQuest Web application successfully completes the lookup on one of the available registry servers, it is ready to receive ClearQuest Web client requests.



---

## Chapter 3. Customizing New ClearQuest Web

The ClearQuest Designer provides many ways to customize the underlying schema and functionality that is accessed by New Rational ClearQuest Web. In addition, New ClearQuest Web provides its own settings that enable you to specify further customizations that are visible only in the ClearQuest Web application.

This section describes only those customizations you can implement in New ClearQuest Web. For information about customizing ClearQuest functionality using ClearQuest Designer, see the ClearQuest Administration help and *Administrator's Guide* for Rational ClearQuest.

Many customizations described in this chapter require that you access the Site Configuration page in the New ClearQuest Web application. Access to this page requires administrative privilege in the underlying ClearQuest schema.

---

### HTTP Session Timeout

In the New ClearQuest Web application, any HTTP session that remains idle beyond a specified period of time is terminated. After a session times out, you must log on to New ClearQuest Web again. In some cases, you might have to restart your last transaction.

To modify the HTTP session timeout setting:

1. Click **Site Configuration** in the ClearQuest Web application banner.
2. Click the **Application Options** tab.
3. In the **Session Timeout** field, specify the timeout setting (in minutes).  
The default setting is 30 minutes.
4. Click **Save** in the toolbar.

This change does not require restarting the server. However, only new Web application sessions will reflect this change. Existing Web application sessions will continue to use the settings that were in effect when the sessions were originally started. To take advantage of the new session timeout setting, you must exit your current Web application session and start another.

### ClearQuest Server Session and Database Timeout Settings

The session timeout defined here interacts with session timeouts defined for the underlying ClearQuest server sessions and the ClearQuest database in use with New ClearQuest Web.

#### ClearQuest Server Session Timeout

You can define the session timeout for the ClearQuest server by editing the `rmmanager.properties` file.

##### On Windows

`C:\Program Files\Rational\ClearQuest\cqweb\cqserver\config\rmmanager.properties`

##### On UNIX

`/opt/rational/clearquest/cqweb/cqserver/config/rmmanager.properties`

To change the ClearQuest server session timeout (the default is 60 minutes), modify the `SESSION_INACTIVE_LIFETIME_IN_CACHE` setting.

### ClearQuest Database Timeout

It is possible to connect to multiple databases within the same New ClearQuest Web application session. If you leave one database to work on another, and you exceed the timeout period for the first database without any direct activity from your Web session, you are required to reconnect to that database.

For details about setting timeouts in your ClearQuest database, see the ClearQuest administration and database configuration documentation.

---

## Export Grid Delimiter

You can export query result content to a file, delimiting each result by a particular character. The default delimiter is the pipe ( `|` ) character.

You can then import this file into another tool, such as Microsoft Excel, to process the query result using the delimiter.

To modify the export delimiter setting:

1. Click **Site Configuration** in the New ClearQuest Web application banner
2. Click the **Application Options** tab.
3. In the **Export Grid Delimiter** field, specify the delimiter character.
4. Click **Save** in the toolbar.

After you make this change, all subsequent export query results reflect the new settings. This change does not require a server or Web application restart.

**Note:** Changing the export delimiter affects the entire ClearQuest Web site. All connections and user databases attached to the ClearQuest Web site use the new delimiter.

---

## Result Set Column Width

When a query is executed, the fields displayed are those selected when the query was built. Changing the width of the columns in the display affects the entire ClearQuest Web site.

Changing this setting might affect performance, because New ClearQuest Web is optimized to request the minimum amount of data. If the query includes a lengthy description field, New ClearQuest Web transmits and displays only the number of characters specified by the **Result Set Column Width** setting.

To modify the **Result Set Column Width** setting:

1. Click **Site Configuration** in the New ClearQuest Web application banner
2. Click the **Application Options** tab.
3. In the **Result Set Column Width** field, specify the value in characters. The default is 40 characters.
4. Click **Save** in the toolbar.

After you make this change, all subsequent query results reflect the new settings. This change does not require a server or Web application restart.

---

## Load Initial Record from Result Set

When a query is executed, you can choose to load the first record in the result set into the Record Form pane. The default behavior is not to display the individual record until you select it in the Result Set pane.

The processing load on your application server is lower for each query if you choose not to display this initial record. However, users must then perform a second action to display the initial record.

To modify the **Load Initial Record from Result Set** setting:

1. Click **Site Configuration** in the New ClearQuest Web application banner
2. Click the **Application Options** tab.
3. In the **Load Initial Record from Result Set** checkbox:
  - Select to load the initial record of the result set.
  - Clear to not load the initial record.
4. Click **Save** in the toolbar.

Once you make this change, all subsequent queries reflect the new settings. This change does not require a server or Web application restart.

---

## Load Updated Record after Saving

When you modify a record, you can choose whether the updated record should appear in the Record Form pane in read-only mode. After you modify a record, you can reload it by clicking the View button.

The processing load on your application server is lower for each record modification if you choose not to display the updated record. However, users must then perform a second action to display the updated record.

To modify the **Load Updated Record after Saving** setting:

1. Click **Site Configuration** in the New ClearQuest Web application banner
2. Click the **Application Options** tab.
3. In the **Load Updated Record after Saving** checkbox:
  - Select to load the updated record after modification.
  - Clear to not load the updated record.
4. Click **Save** in the toolbar.

Once you make this change, all subsequent queries reflect the new settings. This change does not require a server or Web application restart.

---

## Login Logo

You can customize the image on the login page that appears when you first log on to the New ClearQuest Web application. To modify this setting:

1. Copy the file that contains the login logo image into a filesystem location under the RWP directory on the Web server. Typically, this file should be copied into the `htdocs` directory (or a subdirectory underneath it):

### On Windows

`C:\Program Files\Rational\Common\rwp\htdocs`

### On UNIX

/opt/rational/common/rwp/htdocs

2. Click **Site Configuration** in the ClearQuest Web application banner.
3. Click the **Application Options** tab.
4. Under **Login Logo**, specify the location of the file.

If you placed the login logo file in the htdocs directory or in a subdirectory underneath it, specify the file reference using a relative URL preceded by a forward slash. For example:

- /myLoginImage.gif
- /myFolder/myLoginImage.gif
- /myFolder/mySubFolder/myLoginImage.gif

If you placed the file in any other location, specify the file reference using an absolute Web URL. For example:

- http://myServer/myLoginImage.gif
- http://myServer/myFolder/myLoginImage.gif
- http://myServer/myFolder/mySubFolder/myLoginImage.gif

5. Click **Save** in the toolbar.

Once you make this change, all subsequent login access reflects the new settings. This change does not require a server or Web application restart.

---

## Login Home Page

You can customize the contents of the home page that appears when you first log on to the New ClearQuest Web application. To modify this setting:

1. Copy the HTML file that contains the home page content into the RWP htdocs directory on the Web server (or a subdirectory underneath it).

On Windows

C:\Program Files\Rational\Common\rwp\htdocs

On UNIX

/opt/rational/common/rwp/htdocs

2. Click **Site Configuration** in the ClearQuest Web application banner.
3. Click the **Application Options** tab.
4. Under **Home Page**, specify the location of the file.

The home page file must be located under the htdocs directory for the ClearQuest Web application. For example:

- C:\Program Files\Rational\Common\rwp\htdocs\myHomePage.html
- C:\Program Files\Rational\Common\rwp\htdocs\myFolder\myHomePage.html
- C:\Program Files\Rational\Common\rwp\htdocs\myFolder\mySubFolder\myHomePage.html

Specify the file reference using a relative URL preceded by a forward slash. For example:

- /myHomePage.html
- /myFolder/myHomePage.html
- /myFolder/mySubFolder/myHomePage.html

The only supported file format is HTML.

5. Click **Save** in the toolbar.

Once you make this change, all subsequent home page access reflects the new settings. This change does not require a server or Web application restart.

---

## Result Set Page Size

When running queries from New ClearQuest Web, you can limit the page size of the result set by changing the `WEB_RESULT_SET_PAGE_SIZE` value in the `pl.properties` file.

1. Open the `pl.properties` file.

### On Windows

`C:\Program Files\Common\rwp\webapps\cqweb\WEB-INF\classes\pl.properties`

### On UNIX

`/opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes/pl.properties`

2. Change the default value (25) to the result set page size you want to set.
3. Save the `pl.properties` file.

This change requires that you restart the ClearQuest server and any ClearQuest Web application sessions open at the time of the change.

---

## Maximum Row Count

When exporting records from New ClearQuest Web, you can limit the number of output records that are exported by changing the `WEB_MAX_ROW_COUNT` value in the `pl.properties` file.

1. Open the `pl.properties` file.

### On Windows

`C:\Program Files\Common\rwp\webapps\cqweb\WEB-INF\classes\pl.properties`

### On UNIX

`/opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes/pl.properties`

2. Change the default value (1000) to the upper limit you want to set.
3. Save the `pl.properties` file.

This change requires that you restart the ClearQuest server and any ClearQuest Web application sessions open at the time of the change.

**Warning:** Setting this property to a value greater than 10,000 can cause your browser to hang or time out waiting for all query result values to be returned. An example of an action that could cause this would be if you chose to export the grid from a Query Result Set Window that contained more than 10,000 records.

If you want to export more than 10,000 records from your database, use the native ClearQuest server database export tools. For details about using database export tools, see the *Administrator's Guide* for Rational ClearQuest.

---

## Enabling the Legend Display

The Legend Display appears at the bottom of the Web application sessions. To enable and disable this, change the `usesLegend` element value in the `pxconfig.xml` file.

1. Open the `pxconfig.xml` file.

### On Windows

`C:\Program Files\Common\rwp\webapps\cqweb\WEB-INF\classes\pxconfig.xml`

### On UNIX

- /opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes/pxconfig.xml
2. Change the value of the usesLegend element to True (enable display) or False (disable display (the default)).
  3. Save the pxconfig.xml file.

This change requires that you restart the Rational Web Platform component and any Web application sessions open at the time of the change.

---

## Customizing the jtl.properties File

You can change the behavior of New ClearQuest Web by changing the jtl.properties file for the ClearQuest server and ClearQuest Web application.

The locations of the jtl.properties files are listed in Table 5.

*Table 5. jtl.properties File Locations*

Component	Configuration File Locations
ClearQuest server	<b>On Windows</b>  C:\Program Files\Rational\ClearQuest\cqweb\cqserver\config\jtl.properties  <b>On UNIX</b> /opt/rational/clearquest/cqweb/cqserver/config/jtl.properties
ClearQuest Web application	<b>On Windows</b>  C:\Program Files\Common\rwp\webapps\cqweb\WEB-INF\classes\jtl.properties  <b>On UNIX</b> /opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes/jtl.properties

Any changes to these files require that you restart the component associated with the file you modified.

- If you modify the jtl.properties for the ClearQuest server, you must restart the ClearQuest server to enable the changes for subsequent Web application sessions.
- If you modify the properties for the Web application, you must restart the Rational Web Platform component.

## Parameters Specified in jtl.properties Files

The jtl.properties files contain several parameters that you can use to configure the behavior of your Web applications. IBM recommends that you modify only the properties listed. Changing the values of the other properties can have unexpected results.

*Table 6. Customizations Supported in jtl.properties Files*

Parameter	Explanation
RPCREQUESTTIMEOUTSECONDS	The time (in seconds) that the ClearQuest Web application waits for a response to a request.  If the request manager is abandoning the request before the database can return the results, you can increase this setting.

Table 6. Customizations Supported in *jtl.properties* Files (continued)

Parameter	Explanation
MAXSERVICEREQUESTTHREADS	<p>The number of threads that handle the processing of service requests on the request manager component of the ClearQuest server.</p> <p>You increase this value to attempt to minimize the queued time for multiple requests</p> <p>The default is five per CPU.</p>
MAXSERVICERESPONSETHEADS	<p>The number of threads sending responses back to the various requestors.</p> <p>The default is one per CPU.</p>
JTLRMIREGISTRYSERVERS	<p>The JTL RMI ClearQuest registry server specifications. You can specify a single entry of the form <i>server: port</i></p> <p>or multiple comma-separated entries for each JTL RMI ClearQuest registry server.</p> <p>This property is used by both the request manager component of the ClearQuest server and the ClearQuest Web application.</p>

## Controlling Java VM Memory Consumption

You can configure the memory consumption of Java processes used by New ClearQuest Web by adjusting the parameters in property files under the various components.

### Windows

This section describes the configuration changes for New ClearQuest Web Java VM memory consumption for processes running on Microsoft Windows.

To specify the VM memory consumption:

1. Open the appropriate configuration file for the New ClearQuest Web component whose memory consumption you want to reconfigure.

For the ClearQuest Web application:

Component	Configuration file
Apache Tomcat Server	C:\Program Files\Rational\Common\rwp\bin\jk_service2.in.properties
Rational Web Platform	C:\Program Files\Rational\Common\rwp\bin\jk_service2.properties

For the ClearQuest server:

Component	Configuration file
ClearQuest Request Manager	C:\Program Files\Rational\ClearQuest\cqweb\cqserver\requestmgr_service.properties
ClearQuest Registry Server	C:\Program Files\Rational\ClearQuest\cqweb\cqregsvr\cqregsvr_service.properties

2. Modify the section shown below:

```
#
# JVM Options
#
```

```
# Useful Options:

#           -Xms2m           = Initial heap size, modify for desired size
#           -Xmx256m         = Maximum heap size, modify for desired size
#           -Xrs              = Available in Jdk1.3.1 to avoid JVM termination during logoff
#
wrapper.jvm.options=-Xrs -Xms2m -Xmx256m
```

## UNIX

This section describes the configuration changes for New ClearQuest Web Java VM memory consumption for processes running on UNIX.

### ClearQuest Web Application

To specify the VM memory consumption for the ClearQuest Web application:

1. Open the configuration file for the ClearQuest Web application:  
/opt/rational/common/rwp/bin/setclasspath.sh
2. Modify the -Xms and -Xmx settings in this section:  
JAVA\_OPTS="-Xms16m -Xmx256m"

### ClearQuest server

To specify the VM memory consumption for the ClearQuest server components:

1. Open the appropriate shell script file for the ClearQuest server component whose memory consumption you want to reconfigure:

Component	Shell script
<b>Request Manager</b>	/opt/rational/clearquest/cqweb/cqserver/ start_cqrm.sh
<b>Registry Server</b>	/opt/rational/clearquest/cqweb/cqregsvr/ start_cqreg.sh

2. Modify the -Xms and -Xmx settings in the appropriate shell file.

```
java -Xms256m -Xmx256m classname &
```

where *classname* is the name of the component class:

<b>Request manager</b>	com.rational.clearquest.cqweb.requestmgr. RmInitialization
<b>Registry server</b>	com.rational.clearquest.cqweb.jtl. JTLRegistryServer

**Note:** For the ClearQuest server components, there are two occurrences of the "java -Xms256m -Xmx256m..." sections in each shell script file.

## Limitations

There are some practical limitations to setting the values of the -Xms and -Xmx options:

- You can modify the -Xms option up to 512m .
- The value of the -Xms option cannot be greater than that of the -Xmx option or unpredictable behavior can occur.

- Ensure that you have enough physical memory on the machine before you modify this parameter. Increasing this setting to a value that is more than 60% of your physical memory or greater than 1 GB can cause memory page swapping, which can degrade performance.

These limitations apply to all memory configuration settings for ClearQuest server and Web application components running on Windows and UNIX platforms.

---

## Testing Schema Modifications in ClearQuest Web

The forms you create in ClearQuest Designer might appear differently when viewed by ClearQuest clients on Windows, on UNIX, and on the Web. However, the same information is available to all clients.

When you design a form, your tests should include viewing the form in the New ClearQuest Web interface. Testing forms in New ClearQuest Web requires that you deploy the forms to a test database that is accessible to the ClearQuest Web application. This behavior is different from that of ClearQuest Designer, which allows you to test the forms by using the native client without deploying the forms to a database.

IBM recommends that you create a separate test database for testing schema modifications in ClearQuest Web. Note that by default non-production databases are not visible in the preconfigured lists that are presented when logging on to ClearQuest Web. To use a database that has been specified as a test database in the ClearQuest Designer, the login URL for accessing ClearQuest Web must include the parameter `test=1`. For example:

`http://myhost/cqweb/login?test=1`

When you log on to ClearQuest Web in this manner, the database selection list that typically appears in the global toolbar is replaced by a simple text field in which you can specify the name of any database.

---

## Integrations to Native ClearQuest Clients

Fields, forms, reports, scripts, and other functionality added to a native ClearQuest client on either Windows or UNIX by an integration package are not available through the New ClearQuest Web client.

For example, if you are running an integration between ClearQuest and Microsoft Project, and you have specified ClearQuest record fields that contain data from Microsoft Project files, those ClearQuest record fields are not visible in New ClearQuest Web.

---

## ClearQuest Data Code Page

The operating system on the computer running the ClearQuest request manager must specify the same code page as that specified in the operating system on the computer running the ClearQuest database. If there is a mismatch in the code pages on these two operating systems, users might not be able to log on to the ClearQuest Web application or might not be able to enter data.

The operating system on the computer running the ClearQuest Web application must specify the same code page as that specified on the computer running the ClearQuest server. Otherwise, file attachments might not work properly.

To summarize, IBM recommends that the code pages specified in the operating systems for all of the following computers agree:

- the computer running the ClearQuest server
- the computer running the ClearQuest database
- the computer running the ClearQuest Web application
- the computer running the browser from which the user is logging on to the ClearQuest Web application

---

## Chapter 4. Controlling Access to New ClearQuest Web

The ClearQuest Designer provides many ways to customize security policies that are enforced in New Rational ClearQuest Web. In addition, New ClearQuest Web provides its own security functionality that affects only the New ClearQuest Web application and ClearQuest server behavior.

This chapter describes only those customizations that you can implement in New ClearQuest Web. For information about customizing security policies by using ClearQuest Designer, see the ClearQuest Administration help and the *Administrator's Guide* for Rational ClearQuest.

All customizations described in this chapter require that you access the Site Configuration page in the New ClearQuest Web application. Access to this page requires administrative privilege in the underlying ClearQuest schema.

---

### Restricted Mode

You can control access to New ClearQuest Web by restricting users or user groups to the following activities:

- Submitting records
- Running a single query
- Finding a specified record

Restricted mode provides a layer of user privilege control in addition to that provided in the underlying ClearQuest schema.

For example, you can enable users to provide feedback through a password-protected extranet.

1. Create a ClearQuest user group for customers who will provide beta feedback.
2. Configure your New ClearQuest Web site to support only restricted mode Web application sessions. For details, see “Configuring Restricted Mode Access” on page 23.
3. Distribute the ClearQuest URL to that group.

The group can only submit records and use the query that you specify. The query results are read-only.

When you log on to New ClearQuest Web in restricted mode, the words **Restricted Mode** appear in the navigation banner at the top of the display. Users are logged on under restricted mode whenever they are unable to obtain a valid New ClearQuest Web license (for example, if all currently available licenses are in use), or if their user account or group are specified to operate in restricted mode.

---

### Configuring Restricted Mode Access

To configure New ClearQuest Web to run in restricted mode for specific users or user groups, in New ClearQuest Web click **Site Configuration** in the banner and then click the **Security Options** tab.

On this tab, select one of the configurations in the table.

<b>Restrict Site</b>	<p>If this option is selected, all users run in restricted mode when accessing this ClearQuest Web site.</p> <p>If this option is not selected (which is the default setting), all users can access the ClearQuest Web site, subject to the restrictions specified in the remaining options on the page.</p> <p>Selecting this option overrides any specifications in the <b>Restricted Users</b> and <b>Restricted User Groups</b> options.</p>
<b>Restricted Users</b>	<p>If you specify any user names in this field, those users access this ClearQuest Web site only in restricted mode.</p> <p>If no names are specified (which is the default setting), all users can access this site (subject to the settings of the <b>Restrict Site</b> and <b>Restricted User Groups</b> options).</p>
<b>Restricted User Groups</b>	<p>If you specify any user groups in this field, users in those groups access this ClearQuest Web site only in restricted mode.</p> <p>If no groups are specified (which is the default setting), all members of all groups can access this site (subject to the settings of the <b>Restrict Site</b> and <b>Restricted Users</b> options).</p>
<b>Restricted Query</b>	<p>If you specify a query in this field, users running in restricted mode can access only that query.</p> <p>If no query is specified in this field (which is the default), users running in restricted mode have no queries available to them.</p> <p>To specify a query, use the path to that query relative to the underlying ClearQuest schema workspace (for example, Public Queries/My Defects).</p>
<b>Allow Find Record When Restricted</b>	<p>If this option is selected, users running in restricted mode can use the Find Record feature in the toolbar to access ClearQuest records.</p> <p>If this option is not selected (which is the default), users running in restricted mode cannot see the Find Record feature.</p>

After the appropriate settings have been specified, click **Save** in the toolbar.

Changes to the settings on this tab do not require restarting the server. However, only subsequent ClearQuest Web application sessions will reflect these changes. Existing Web application sessions will continue to use the settings that were in effect when the sessions were originally started.

## Specifying Unrestricted and Restricted Mode Access

Several of the options on the **Security** tab of the **Site Configuration** page work together to specify restricted mode access to your users of your site. Here is a summary of how to use these options to specify varying assignments of restricted mode access:

To provide unrestricted access for all users and groups

- Clear the **Restrict Site** option.
- Do not specify any users in the **Restricted Users** option.
- Do not specify any user groups in the **Restricted User Groups** option.

To limit some users or user groups to restricted mode access

- Clear the **Restrict Site** option.
- In the **Restricted Users** option, specify the users that will access your site in restricted mode.
- In the **Restricted User Groups** option, specify the user groups that will access your site in restricted mode.

To limit all users to restricted mode access

- Select the **Restrict Site** option.

Selecting the **Restrict Site** option overrides any settings in the **Restricted Users** and **Restricted User Groups** options.



---

## Chapter 5. Ports Used by New ClearQuest Web

This chapter describes the ports used by the New ClearQuest Web components. It also identifies files in which they are configured.

**Note:** IBM recommends that you do not change any of the port assignments. For a description of each port used by a component, see the component's associated property file.

---

### Ports Used by the ClearQuest Web Application

All ports used by the ClearQuest Web application are configured in the Rational Web Platform `jtl.properties` file.

#### On Windows

`C:\Program Files\Rational\common\rwp\webapps\cqweb\Web-INF\classes\jtl.properties`

#### On UNIX

`/opt/rational/common/rwp/webapps/cqweb/Web-INF/classes/jtl.properties`

The ClearQuest Web application uses the ports listed below, as specified in this file:

```
JTLRMICALLBACKPORTS=1140,1142
JTLRMICALLBACKFILESERVERPORTS=1141,1143
```

### Port used by the IBM Rational Web Platform

The ClearQuest Web application runs on the IBM Rational Web Platform (RWP). The port on which RWP listens for HTTP requests is defined by the `Listen` parameter in `rwp.conf`.

#### On Windows

`C:\Program Files\Rational\common\rwp\conf\rwp.conf`

#### On UNIX

`/opt/rational/common/rwp/conf/rwp.conf`

For example,  
`Listen 80`

tells RWP to listen on port 80 (the default for HTTP).

For details about ports used by RWP, see Chapter 8, "Configuring the IBM Rational Web Platform," on page 39.

---

### Ports Used by the ClearQuest Server

This section describes which ports are used by the components of the ClearQuest server (in particular, the ClearQuest registry server and the ClearQuest request manager).

## ClearQuest Registry Server

The registry server uses port 1130 to listen to all the registration requests from the request managers and for the lookup requests from the ClearQuest Web application.

This port cannot be changed and is not configurable.

## ClearQuest Request Manager

All ports used by the request manager are configured in the ClearQuest `jtl.properties` file:

### On Windows

`C:\Program Files\Rational\ClearQuest\cqweb\cqserver\config\jtl.properties`

### On UNIX

`/opt/rational/clearquest/cqweb/cqserver/config/jtl.properties`

The request manager uses the ports listed below, as specified in this file:

- `JTLRMISERVICEPORT=1132`
- `JTLRMISERVERFILESERVERPORTS=1133`

---

## Modifying Ports Used by New ClearQuest Web

In many cases, you can modify the ports used by the ClearQuest server and Rational Web Platform.

For information about modifying ports used by the ClearQuest server, see “Customizing the `jtl.properties` File” on page 18. For information about modifying ports used by the Rational Web Platform (including configuring reverse proxy support), see Chapter 8, “Configuring the IBM Rational Web Platform,” on page 39.

---

## Chapter 6. Using Hooks in New ClearQuest Web

Hooks created in the ClearQuest schema execute on computers that run the ClearQuest server. Keep in mind the following points when using hooks on New ClearQuest Web:

- You must enable dependent fields for New ClearQuest Web.
- You cannot use message boxes.
- Context-menu hooks and field hooks (for example, value change, validation hooks) are not supported in the New ClearQuest Web application.
- You can use hooks to detect a Web session.

---

### Enabling Dependent Fields for ClearQuest Web

**Note:** The configuration steps described in this section are performed in ClearQuest Designer, not in the New ClearQuest Web application or server.

To make a form with dependent fields available in New ClearQuest Web:

1. When you add the field to the record form, use one of the following form controls for the parent field and its dependent fields. You can mix and match.
  - Drop-down list box
  - Combo box
  - Drop-down combo box
2. After adding the controls to the record form, right-click the control for the parent field and click **Properties**.
3. On the **Web Dependent Fields** tab, select the appropriate child fields from the **Available** list and click the arrow button to add them to the **Selected** list.
4. Right-click the control on the form and click **Properties**. In the property sheet for the control, use the **Web Dependent Fields** tab to specify the fields that depend on the respective field's value.

Only the parent field of the dependency must be Web enabled.

**Note:** To update the choice list associated with the dependent field, click **Recalculate Choice List** when you create the choice list in the field. ClearQuest recalculates the contents of the list before displaying it, which can degrade Web performance.

---

### Displaying Messages on New ClearQuest Web

Do not create hooks that call external functions. Functions that call other Windows applications, such as a message box, can cause the New ClearQuest Web application to hang.

For example, if a message box function runs on a ClearQuest server, the message box opens on the server's screen. Because the user cannot click **OK** on the server, the Web application is left waiting. To solve the problem, you must reboot the ClearQuest server.

If record script hooks return a string value, that string is displayed to the user.

---

## Using Hooks to Detect a Web Session

When writing hooks, you can use the ClearQuest API to detect whether a user is on a Web browser or in the native client. This information allows you to take appropriate action if you have not adjusted your schema to match the functionality available on the Web.

For example, when you detect a Web session in a function that creates a message box or a new window, you can call code modified for the Web environment or exit the function.

### Web Session Detection in VBScript

```
dim currDBSession ' Current Db session
set currDBSession = GetSession

' Test for existence of the web session variable.
if currDBSession.HasValue ("_CQ_WEB_SESSION") then
' Either exit or do something else
end if
```

### Web Session Detection in Perl

```
my $currDBSession; # Current Db session
$currDBSession = $entity->GetSession();
# Test for existence of the web session variable
if ( $currDBSession->HasValue ("_CQ_WEB_SESSION") {
# Either exit or do something else
}.
```

---

## Chapter 7. Configuration and Logging Files

This section describes the configuration and logging files used by New Rational ClearQuest Web.

**Note:** This chapter assumes that you have installed New ClearQuest Web to the default location (C:\Program Files\Rational on Windows or /opt/rational on UNIX). If you have installed New ClearQuest Web to some other location, adjust the pathnames to reflect the appropriate installation location.

---

### Configuration Files

This section shows where to find the configuration files that are used by each of the New ClearQuest Web components. For information about modifying settings in the various component files, see Chapter 3, “Customizing New ClearQuest Web,” on page 13 in this book and also the *Installation Guide* for New Rational ClearQuest Web. The configuration files contain comments that can be helpful in determining how the parameters defined in them are used.

Any changes to these files require that you restart the component associated with the file you modified:

- If you modify the properties for the ClearQuest server, you must restart the New ClearQuest server components to enable the changes for subsequent Web application sessions.
- If you modify the properties for the ClearQuest Web application, you must restart the Rational Web Platform component.

### ClearQuest Web Application

The ClearQuest Web application runs using the Rational Web Platform, so its configuration files are located under the RWP directory:

#### On Windows

C:\Program Files\Rational\Common\rwp\webapps\cqweb\WEB-INF\classes

#### On UNIX

/opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes

### ClearQuest Server

The configuration files for the ClearQuest server are located in this directory:

#### On Windows

C:\Program Files\Rational\ClearQuest\cqweb\cqserver\config

#### On UNIX

/opt/rational/clearquest/cqweb/cqserver/config

---

## Log Files

This section describes the various log files generated by each component of New ClearQuest Web:

- Rational Web Platform
- ClearQuest registry server
- ClearQuest request manager

By default, only errors are logged in these files. Enabling the diagnostics in Site Configuration makes each component log the maximum information, not errors alone.

### Enabling and Disabling Logging

Full and partial logging can be enabled by modifying the `logging.xml` configuration file or by using the Site Configuration page of the ClearQuest Web application.

**Warning:** By default, only severe log messages are written to the logging files. Changing the logging configuration can impact the performance of your ClearQuest Web site. Typically, changes in the logging configuration should be undertaken only under the guidance of IBM Rational Technical Support.

### Using the `logging.xml` Files

Each of the main components of New Rational ClearQuest Web contains a `logging.xml` file that you can use to specify what level of log messages are written to the log files for that component.

The location of the `logging.xml` files for each component appears below.

<b>ClearQuest Web application (RWP)</b> C:\Program Files\Rational\Common\rwp\webapps\cqweb\WEB-INF\classes\logging.xml /opt/rational/common/rwp/webapps/cqweb/WEB-INF/classes/logging.xml
<b>ClearQuest registry server</b> C:\Program Files\Rational\ClearQuest\cqweb\cgregsvr\config\logging.xml /opt/rational/clearquest/cqweb/cgregsvr/config/logging.xml
<b>ClearQuest request manager</b> C:\Program Files\Rational\ClearQuest\cqweb\cqserver\config\logging.xml /opt/rational/clearquest/cqweb/cqserver/config/logging.xml

In this table, the Windows `logging.xml` file location for each component is displayed above the corresponding UNIX location.

**Note:** If you modify the `logging.xml` file associated with a given component, you must restart that component before the changes take effect.

## Log Message Levels

The logging.xml file supports the levels of error messages listed in Table 7.

Table 7. Logging Levels in New ClearQuest Web

Level specification	Effect
OFF	Logging is turned off. No messages are written to log files.
SEVERE	Exceptions in code or internal errors are reported. User cannot proceed. This is the default setting.
WARNING	Warning-level messages are reported. User can proceed, but might get unexpected results.
INFO	Informational messages displayed as designed in the underlying code. User can proceed.
CONFIG	Configuration messages displayed as designed in the underlying code. User can proceed.
AUDIT	Not used.
PROFILE	Session profile information, such as memory and CPU usage, time settings, and so on.
DEBUG	Debugging messages as encountered during the instruction execution path.
ALL	No filtering of log messages occurs.

For example, to enable logging of all messages, change the setting for the level attribute of the logger element to ALL:

```
<logger level="ALL"/>
```

To disable logging completely:

```
<logger level="OFF"/>
```

%a	Remote IP address
%A	Local IP address
%b	Bytes sent, excluding HTTP headers, or '-' if zero
%B	Bytes sent, excluding HTTP headers
%h	Remote host name (or IP address if resolveHosts is false)
%H	Request protocol
%l	Remote logical username from identd (always returns '-')
%m	Request method (GET, POST, and so on)
%p	Local port on which this request was received
%q	Query string (prepended with a '?' if it exists)
%r	First line of the request (method and request URI)
%s	HTTP status code of the response
%S	User session ID
%t	Date and time, in Common Log Format
%u	Remote user that was authenticated (if any), else '-'
%U	Requested URL path
%v	Local server name

## Using the Site Configuration Page

You can use the **Application Options** tab of the **Site Configuration** page in the ClearQuest Web application to specify logging message levels for the ClearQuest Web application (through Rational Web Platform) and the ClearQuest request manager component of the ClearQuest server.

**Note:** You cannot modify the logging message levels for the ClearQuest registry server component using the **Site Configuration** page. You must use the `logging.xml` file as described under “Using the `logging.xml` Files” on page 32.

To set the logging configuration for the ClearQuest Web application and ClearQuest request manager using the **Site Configuration** page:

1. Click **Site Configuration** in the ClearQuest Web application banner.
2. Click the **Application Options** tab.
3. In the **Enable Diagnostics** field, specify either **Default** or **Full**:
  - **Default** configures the logging message level for the components based on the configurations specified for the `logging.xml` file for that component. For details about using the `logging.xml` files for setting logging message levels, see “Using the `logging.xml` Files” on page 32.
  - **Full** configures the logging message level for both components at the DEBUG level (as described under “Log Message Levels” on page 33). The **Full** setting maximizes the information captured in the log files, but can impact the performance of your ClearQuest Web application.
4. Click **Save** in the toolbar.

Changes in the **Enable Diagnostics** field take effect immediately and do not require a ClearQuest server or ClearQuest Web application restart. However, if you modify the settings for an individual component using the `logging.xml` file (as described in Step 3 on page 34), you must restart that component before the changes take effect.

## Rational Web Platform Logs

The ClearQuest Web application runs using the Rational Web Platform (RWP), so the log files are located under the RWP directory on the computer that is running the ClearQuest Web application:

### On Windows

`C:\Program Files\Rational\Common\rwp\logs`

### On UNIX

`/opt/rational/common/rwp/logs`

The log files for the ClearQuest Web application (RWP) are described in Table 8.

Table 8. Rational Web Platform Log Files

Log File	Description	Usage
access.log	Apache access log containing the list of IP addresses that have accessed New ClearQuest Web and when they accessed it. This log is a super set of the Tomcat access log: localhost_access.log.	A complete list of all the HTTP requests that were directed to the RWP server. <b>Note:</b> You can configure the Rational Web Platform for the level of access logging. See "To configure RWP logging" on page 41.
access_https.log	Apache access log for SSL (HTTPS) requests.	Tracking SSL (HTTPS) requests
localhost_access.log	Tomcat access log.	A list of both HTTP and HTTPS requests that were sent to the Tomcat that is running New ClearQuest Web.
error.log	Apache general log.	Determine if there are RWP server problems.
localhost_log	Tomcat log for default host.	Determine if there are RWP server problems
catalina_log	Tomcat log for Catalina container object.	Determine if there are RWP server problems
jvm.stdout	Standard output log for the Tomcat Java process.	Use to verify the normal start of the Tomcat process. If Tomcat does not start normally, review this log file.  This file contains the main operational logging message output from the ClearQuest Web application.
jvm.stderr	Standard error log from the Tomcat Java process.	Normally the jvm.stderr is empty. If Tomcat does not start normally, review this log file.

**Note:** Typically, many of the names of the RWP log files contain date format suffixes (for example, access.log.1071187200). To improve readability, these suffixes do not appear in the file names shown in Table 8.

### Example

You can view access log information in the Rational Web Platform Apache web server access in the access.log file. This log file contains the list of IP addresses that have submitted HTTP requests to the application and when they accessed it.

An example of log messages contained in an access.log file:

```
192.168.223.1 - - [23/Aug/2003:17:36:37 -0400]
"GET /cqweb/main?command=ExecuteQuery
&queryName=Public+Queries%2FA11+Defects
&dbid=33554655&pNm=Public+Queries
&pDbid=33554440 &rmssessionid=e8746e42-eb91-4773-bd99-c0a8df01e187
HTTP/1.1" 200 1571

192.168.223.1 - - [23/Aug/2003:17:36:37 -0400]
"GET /cqweb/main?command=ExecuteQueryWithoutPrompts
&dbid=33554655 &rmssessionid=e8746e42-eb91-4773-bd99-c0a8df01e187
&bNewQuery=false
&bNewSavedQuery=true&queryName=Public%20Queries%2FA11 %20Defects
HTTP/1.1" 200 519

192.168.223.1 - - [23/Aug/2003:17:36:38 -0400]
"GET /cqweb/main?command=GetWSCContentFrame
&dbid=33554655
&qid=33554655&rmssessionid=e8746e42-eb91-4773-bd99-c0a8df01e187
HTTP/1.1" 200 1151
```

```
192.168.223.1 - - [23/Aug/2003:17:36:38 -0400]
"GET /common/html/null.html HTTP/1.1" 304 0
```

## Rational Web Platform Information Pages

Rational Web Platform provides two built-in information pages that can be accessed as follows:

`http://servername/server-status`

`http://servername/server-info`

where *servername* is the name of the host where the ClearQuest Web application component is installed.

The server-status page provides information about the current status of the server; for example, how long it has been up and how many requests it is currently processing. The server-info page provides additional static information about the server (for example, what modules are built in and what directives are in effect).

## ClearQuest Request Manager Log Files

The log files for the ClearQuest request manager component are installed at the following location on all ClearQuest server computers:

### On Windows

`C:\Program Files\Rational\clearquest\cqweb\cqserver\logs`

### On UNIX

`/opt/rational/clearquest/cqweb/cqserver/logs`

The log files for the ClearQuest request manager are described in Table 9.

*Table 9. ClearQuest Request Manager Log Files*

Log File	Description	Usage
requestmgr.log	Contains the log entries from the ClearQuest request manager component.	Use to verify the flow of execution and to check for error and status messages for the ClearQuest request manager.
requestmgr.jvm.stderr (Windows only) There is no stderr file on UNIX.	Standard error log for the request manager Java process	Use to verify the normal start of the request manager process. If the request manager does not start normally, review this log file.
requestmgr.jvm.stdout (Windows) jvm.stdout (UNIX)	Standard output log for the request manager Java process	Normally the requestmgr.jvm.stdout is empty. If the request manager does not start normally, review this log file.

Logging for the ClearQuest request manager can be enabled and configured using Site Configuration page of the ClearQuest Web application or by modifying the `logging.xml` configuration file. For details about enabling and disabling logging, see “Enabling and Disabling Logging” on page 32.

## ClearQuest Registry Server Log Files

The log files for the ClearQuest registry server component are installed at the following location on all ClearQuest server computers:

### On Windows

C:\Program Files\Rational\clearquest\cqweb\cqregsvr\logs

**On UNIX**

/opt/rational/clearquest/cqweb/cqregsvr/logs

The log files for the ClearQuest registry server are described in Table 10.

*Table 10. Registry Server Log Files*

Log File	Description	Usage
cqregsvr.log	Contains the log entries from the ClearQuest registry server component.	Use to verify the flow of execution and to check for error and status messages for the ClearQuest registry server.
cqregsvr.jvm.stderr (Windows)jvm.stderr (UNIX)	Standard error log for the registry server Java process.	Use to verify the normal start of the registry server process. If the registry server does not start normally, review this log file.
cqregsvr.jvm.stdout (Windows)jvm.stdout (UNIX)	Standard output log for the registry server Java process.	Normally the cqregsvr.jvm.stdout is empty. If the registry server does not start normally, review this log file.

Logging for the ClearQuest registry server can be enabled and configured only by modifying the logging.xml configuration file. (That is, you cannot configure logging for this component using the Site Configuration page of the ClearQuest Web application.)

For information about modifying the logging.xml file to configure logging, see “Using the logging.xml Files” on page 32.



---

## Chapter 8. Configuring the IBM Rational Web Platform

The IBM Rational Web Platform (RWP) provides server side support for Web interfaces to various IBM products, including Rational ClearQuest. RWP is installed with a default configuration, which is suitable for most sites. Some sites may need to modify the RWP configuration after installation to accommodate various host- or site-specific requirements. For example:

- To make RWP use a different HTTP port number
- To change RWP logging defaults
- To configure access to RWP from another Web server acting as a proxy
- To configure RWP to use secure sockets

This chapter explains how to edit the RWP configuration files to make some of the more common changes in the default configuration.

The Rational Web Platform includes a Web server based on the Apache HTTP Server version 2.x and a servlet engine based on the Tomcat servlet container version 4.x. Additional information about the Apache HTTP Server is available at [www.apache.org](http://www.apache.org). Additional information about the Tomcat servlet container is available at [jakarta.apache.org](http://jakarta.apache.org).

On UNIX, RWP always runs a single instance of the RWP servlet engine. On Windows, RWP creates a second instance of the servlet engine for use if needed.

**Note:** The Rational Web Platform supports only the Web interfaces to IBM products. Using it to serve other Web applications or content is not supported.

---

### RWP installation directory

RWP is normally installed in one of the following directories:

- On Windows, C:\Program Files\Rational\common\rwp
- On UNIX, /opt/rational/common/rwp. If RWP is installed in another location, the installer creates the symbolic link /opt/rational/common/rwp, which points to the RWP installation directory.

The default RWP installation directory can be changed at installation time by supplying a different path when prompted by the install program.

---

### RWP configuration files

RWP configuration is specified in several files. The following files are normally installed in the conf subdirectory of the RWP installation directory:

- `rwp.conf` specifies configuration parameters for the RWP server.
- `ssl.conf` specifies configuration parameters for secure sockets if they are used by the RWP server.
- `server.xml` specifies configuration parameters for the RWP servlet engine.
- On Windows, `server2.xml` specifies configuration parameters for the RWP ReqWeb servlet engine. (Note, the ReqPro servlet engine is not used with New ClearQuest Web.)

- `workers.properties` specifies configuration parameters for the connections between RWP and RWP servlet engine(s).

On Windows, the following files are normally installed in the `bin` subdirectory of the RWP installation directory:

- `jk_service.properties` controls how the RWP servlet engine runs as a Windows service.
- `jk_service2.properties` controls how the RWP ReqWeb servlet engine runs as a Windows service. (Note, the ReqPro servlet engine is not used with New ClearQuest Web.)

You can edit these files with a text editor such as **notepad** on Windows or **vi** on UNIX. This section describes a few of the parameters that you may need to change. Each file includes additional information about editing the configuration parameters it contains.

**Note:** After changing any configuration parameter in any of these files, you must stop and restart RWP before the change takes effect. See “To stop and restart RWP” on page 43.

## Configuration file reference versions

The RWP installation directory includes reference versions of all configuration files.

- On UNIX:
  - `rwpl.conf.template`
  - `server.xml.template`
- On Windows:
  - `rwpl.in.conf`
  - `server.in.xml`
  - `server2.in.xml`

The install program uses these reference versions to determine whether configuration files have been customized. Do not make any changes to them.

## To change the default RWP HTTP port

The port on which RWP listens for HTTP requests is defined by the **Listen** parameter in `rwpl.conf`. For example,

```
Listen 80
```

tells RWP to listen on port 80 (the default for HTTP). You may change this to specify any available port number. For example:

```
Listen 8000
```

tells RWP to listen on port 8000.

**Note:** If you change the RWP HTTP port number to anything other than 80, all URLs that reference RWP must include the port number. For example:

```
http://RWP_host.domain:8000/cqweb/login
```

## To change the default RWP servlet engine ports

The ports on which the RWP servlet engine communicates with RWP are defined in the `server.xml` and `server2.xml` files as well as the `workers.properties` file. Table 11 lists default port numbers, port uses, and the files in which the port numbers are defined.

Table 11. Default RWP servlet engine ports

Port number	Description	Location
8009 (8010 on HP-UX)	Used for communication between RWP and the RWP servlet engine	server.xml, workers.properties
8010	Used for communication between RWP and the RWP ReqWeb servlet engine (Windows only).	server2.xml, workers.properties
8005 (8006 on HP-UX)	RWP servlet engine shutdown port	server.xml

If any of these ports is used by another application on the RWP host, we recommend that you reconfigure that application to use different ports. If you cannot, you must change the ports RWP uses.

The following example, from `server.xml`, defines port 8009 as the port used for internal communication between RWP and the RWP servlet engine:

```
<Connector className="org.apache.jsp.tomcat4.Ajp13Connector"
  port="8009" minProcessors="5" maxProcessors="75"
  acceptCount="10" debug="0"/>
```

To change either port, change the value of the **port** attribute of the appropriate **Connector** element. For example, the **port="8088"** attribute in the line

```
<Connector className="org.apache.jsp.tomcat4.Ajp13Connector"
  port="8088" minProcessors="5" maxProcessors="75"
  acceptCount="10" debug="0"/>
```

causes internal communication between RWP and the servlet engine to use port 8088.

**Note:** If you change the port attribute of the **Ajp13Connector** element in `server.xml`, you must also change the port in this line of the `workers.properties` file:

```
worker.ajp13.port=8009
```

If you change the port attribute of the **Ajp13Connector** element in `server2.xml`, you must also change the port in the **worker.ajp13\_2.port** line of `workers.properties`. These files exist only on Windows hosts where RWP supports a second instance of the RWP servlet engine.

## To configure RWP logging

A number of configuration parameters related to access, error, and event logging in `rwp.conf` are grouped under the heading **Logging-related directives**. You may want to change any of the following:

- **ErrorLog** specifies the name of the file where errors are logged. For example, `ErrorLog logs/error.log` specifies that errors will be logged in the file `logs/error.log` under the RWP installation directory.

**Note:** Any RWP log file may be piped to the **rotatelogs** command, as described in “Log rotation and log cleanup” on page 42.

- **LogLevel** specifies the type and severity of errors to be logged. For example, `LogLevel warn`

specifies that errors up to and including warnings will be logged. Table 12 lists the various log levels in order of decreasing severity. Specifying any of these values for **LogLevel** logs events of that severity and all lower severities.

Table 12. RWP log levels

LogLevel	Messages logged
<b>emerg</b>	Emergency messages about events that may render the server inoperable (Highest severity.)
<b>alert</b>	Conditions that should be corrected immediately
<b>crit</b>	Critical conditions such as hardware or system errors
<b>error</b>	All other errors
<b>warn</b>	Warning messages
<b>notice</b>	Conditions that may require special handling
<b>info</b>	Informational messages (lowest severity)
<b>debug</b>	Debugging RWP

- **LogFormat** specifies the format in which events are logged. You can choose one of the predefined formats (for example, **common**), or you can define your own format. For more information about format tokens and the rules for constructing log file strings, see the documentation for **mod\_log\_config** at [www.apache.org](http://www.apache.org).
- **CustomLog** specifies the name of the file in which RWP access requests are logged. For example,  

```
CustomLog logs/access.log common
```

specifies that access requests will be logged in the file `logs/access.log` under the RWP installation directory in the **common** log file format.

## Log rotation and log cleanup

In the default configuration, most RWP log files are piped to the **rotatelogs** program, which periodically creates a new log file. The following line (which has been split into two lines to fit on the page) uses **rotatelogs** to create a new copy of the `access.log` file every 86,400 seconds (24 hours).

```
CustomLog "|\"/opt/rational/common/rwp/bin/rotatelogs.exe\""  
\"/opt/rational/common/rwp/logs/access.log\" 86400" common
```

The log rotation period begins when RWP is started.

---

## To change the user account used by RWP

On installation, RWP is configured to run with the identity of a built-in user account. You can change this account if necessary by using one of the procedures described in this section.

### To change the RWP user account on Windows

On Windows computers, RWP is started at boot time by the Windows Service Control Manager and runs with the identity of the built-in **LocalSystem** account (NT AUTHORITY\SYSTEM).

To change the identity under which RWP runs on Windows:

1. Run the Services application (in **Control Panel > Services** or **Control Panel > Administrative Tools > Services**). RWP includes the following services:
  - Rational Web Platform, HTTP Server

- Rational Web Platform, servlet engine
  - Rational Web Platform, ReqWeb servlet engine
2. Edit each service's **Log On** properties to specify either a local or domain account.
  3. Run **rwpl\_restart** to stop and restart RWP (see "To stop and restart RWP" on page 43).

## To change the RWP user account on UNIX

On UNIX computers, RWP initially runs as **root** to obtain access to the required ports. It then changes its identity to that of a user with minimal privileges. The name and group of this user vary from platform to platform (for example, on Solaris it is typically **nobody.nobody** and on HP-UX it is **www.other**). To change this account on a UNIX computer:

1. Edit the **User** and **Group** lines in **rwpl.conf**. The following entries configure RWP to run as the user **rwpluser.other**:  
**User rwpluser**  
**Group other**
2. Edit the **su** command line in the RWP startup script **rwpl\_startup** (located in the RWP **bin** directory). Change the specified user (the first parameter to the **su** command) to match the account you used in Step 1 on page 43. Do not change anything else on the **su** command line:  
**su rwpluser -c ...**
3. Stop and restart RWP.

---

## To stop and restart RWP

RWP is normally started at boot time. If you need to stop or restart RWP (for example, to force it to re-read a changed configuration file), use one of the following commands, which are normally installed in the RWP **bin** directory:

- **rwpl\_startup** starts RWP if it is not already running.
- **rwpl\_shutdown** stops RWP and any associated servlet engine processes.
- **rwpl\_restart** runs the **rwpl\_shutdown** and **rwpl\_startup** commands, in that order, to restart RWP.

**Note:** Commands that stop and start ClearQuest do not affect RWP.

---

## To configure access to RWP from another Web server

Some sites may need to access RWP by proxy or redirection from another Web server. In this configuration, the other Web server redirects specific URLs to an RWP process running on the same host but using a different port, or running on a separate host. Two common use cases require this type of configuration.

- **RWP and another Web server must run on the same host.** We recommend that you install RWP on a host that does not have to run any other Web servers. If this is impossible, we recommend that you configure the other Web server to use ports that are not being used by RWP. If you cannot do this, you must configure RWP to use ports not used by the other Web server (see "To change the default RWP HTTP port" on page 40) and optionally configure the other Web server to redirect URLs for IBM Web clients to RWP.
- **RWP must run behind a firewall.** To restrict access to RWP, a Web server running on the public side of a firewall can be configured to pass specific URLs to an RWP instance running on the other side of the firewall.

Follow the instructions in this section to enable a proxied or redirected configuration that provides access to RWP from either of the following Web servers:

- Apache HTTP Server
- Microsoft Internet Information Server (IIS)

**Note:** Instructions for configuring proxied or redirected access to a IBM Web application are specific to the application and the Web server acting as the proxy. Only the Web servers and IBM Software products that are specifically cited in this section can be supported in a proxied or redirected configuration.

## Configuring mod\_proxy support for Apache

To configure an instance of Apache HTTP Server to support proxy access to RWP, you must configure the Apache HTTP Server with proxy support supplied by the Apache **mod\_proxy** module. Detailed information about how to do this is available at [www.apache.org](http://www.apache.org). The following is a summary of the steps you will probably need to take:

1. Configure the Apache HTTP Server to load the **mod\_proxy** module and the other modules on which it depends. This typically requires you to uncomment various **LoadModule** directives related to **mod\_proxy** support in the Apache **httpd.conf** file. For example

```
LoadModule proxy_module modules/mod_proxy.so
LoadModule proxy_connect_module modules/mod_proxy_connect.so
LoadModule proxy_http_module modules/mod_proxy_http.so
```

2. Uncomment the **ProxyRequests On** directive in the **<IfModule mod\_Proxy.c>** block in **httpd.conf**:

```
<IfModule mod_proxy.c>
ProxyRequests On
</IfModule>
```

If you are configuring reverse proxy support, change the **ProxyRequests** parameter value from **On** to **Off**. For forward proxy support, leave this parameter set to **On**. Setting **ProxyRequests** to **Off** does not disable use of **ProxyPass** directives.

3. Add the appropriate **ProxyPass** and **ProxyPassReverse** directives within the **<IfModule mod\_proxy.c>** block in **httpd.conf**. **ProxyPass** and **ProxyPassReverse** directives are application specific:

For the ClearQuest Web interface, add these **ProxyPass** and **ProxyPassReverse** directives:

```
ProxyPass / http://hostname[:port]/
ProxyPass /cqweb/ http://hostname[:port]/cqweb/
ProxyPass /wre/ http://hostname[:port]/wre/
ProxyPass /common/ http://hostname[:port]/common/
ProxyPass /px/ http://hostname[:port]/wre/px/
ProxyPass /wpf/ http://hostname[:port]/wre/wpf/
ProxyPass /dct/ http://hostname[:port]/dct/
ProxyPass /scripts/ http://hostname[:port]/scripts/
ProxyPass /view/ http://hostname[:port]/view/
ProxyPass /siteconfig/ http://hostname[:port]/wre/siteconfig/
ProxyPass /help/ http://hostname[:port]/view/browser/help/
ProxyPass /doc/ http://hostname[:port]/doc/
ProxyPass /html/ http://hostname[:port]/wre/common/html/

ProxyPassReverse / http://hostname[:port]/
ProxyPassReverse /cqweb/ http://hostname[:port]/cqweb/
ProxyPassReverse /wre/ http://hostname[:port]/wre/
ProxyPassReverse /common/ http://hostname[:port]/common/
```

```

ProxyPassReverse /px/ http://hostname[:port]/wre/px/
ProxyPassReverse /wpf/ http://hostname[:port]/wre/wpf/
ProxyPassReverse /dct/ http://hostname[:port]/dct/
ProxyPassReverse /scripts/ http://hostname[:port]/scripts/
ProxyPassReverse /view/ http://hostname[:port]/view/
ProxyPassReverse /siteconfig/ http://hostname[:port]/wre/siteconfig/
ProxyPassReverse /help/ http://hostname[:port]/view/browser/help/
ProxyPassReverse /doc/ http://hostname[:port]/doc/
ProxyPassReverse /html/ http://hostname[:port]/wre/common/html/

```

Where *hostname* is the name of the RWP server host and *port* is an optional port number, which you must specify if you have changed the default port on which RWP listens for HTTP requests (see “To change the default RWP HTTP port” on page 40).

For example, the following directives would configure the proxy server to support access by the New Rational ClearQuest Web interface to an RWP process listening on port 81 of a host named **RWP\_host**.

```

ProxyPass / http://RWP_host:81/
ProxyPass /cqweb/ http://RWP_host:81/cqweb/
ProxyPass /wre/ http://RWP_host:81/wre/
ProxyPass /common/ http://RWP_host:81/common/
ProxyPass /px/ http://RWP_host:81/wre/px/
ProxyPass /wpf/ http://RWP_host:81/wre/wpf/
ProxyPass /dct/ http://RWP_host:81/dct/
ProxyPass /scripts/ http://RWP_host:81/scripts/
ProxyPass /view/ http://RWP_host:81/view/
ProxyPass /siteconfig/ http://RWP_host:81/wre/siteconfig/
ProxyPass /help/ http://RWP_host:81/view/browser/help/
ProxyPass /doc/ http://RWP_host:81/doc/
ProxyPass /html/ http://RWP_host:81/wre/common/html/

```

```

ProxyPassReverse / http://RWP_host:81/
ProxyPassReverse /cqweb/ http://RWP_host:81/cqweb/
ProxyPassReverse /wre/ http://RWP_host:81/wre/
ProxyPassReverse /common/ http://RWP_host:81/common/
ProxyPassReverse /px/ http://RWP_host:81/wre/px/
ProxyPassReverse /wpf/ http://RWP_host:81/wre/wpf/
ProxyPassReverse /dct/ http://RWP_host:81/dct/
ProxyPassReverse /scripts/ http://RWP_host:81/scripts/
ProxyPassReverse /view/ http://RWP_host:81/view/
ProxyPassReverse /siteconfig/ http://RWP_host:81/wre/siteconfig/
ProxyPassReverse /help/ http://RWP_host:81/view/browser/help/
ProxyPassReverse /doc/ http://RWP_host:81/doc/
ProxyPassReverse /html/ http://RWP_host:81/wre/common/html/

```

**Note:** The URLs specified in this example must be written in the `httpd.conf` file exactly as specified here, with the exception of the host name and optional port number.

## Configuring URL redirection for Internet Information Server

If RWP must co-exist on a host with an instance of Microsoft Internet Information Server (IIS) that listens for HTTP requests on port 80, you must reconfigure RWP to listen for HTTP requests on a different port (see “To change the default RWP HTTP port” on page 40) and then do one of the following:

- Include a port specifier (for example `http://hostname:81/cqweb/login(was ccweb/)`) in the URLs used by IBM Web interfaces served by this instance of RWP.
- Use the IIS redirection facility to force IBM Web interface URLs directed to port 80 (and received by IIS) to be redirected to RWP.

To configure IIS to use redirection:

1. Run the IIS configuration utility (Internet Services Manager).
2. Create a new virtual directory in the IIS Default Web Site folder:
  - For the **Virtual Directory Alias**, pick a name that reflects the name of the Web client that will use the virtual folder (for example, **ccwebcqweb**)
  - For the **Web Site Content Directory**, you must specify a physical directory on the Web server host. Although this directory must exist on the host, it will not be used to hold any Web site content after you configure redirection in Step 4 on page 46. We recommend that you create a new directory for this purpose and apply protections to it that reduce the chances of its being accidentally deleted.

**Note:** If you create this directory as a subdirectory of the RWP installation directory, it will be deleted if RWP is reinstalled on the host.

  - For **Access Permissions**, specify **Read** and **Run scripts**.
3. Right-click the virtual directory you created in Step 2 on page 46 and open its **Properties** dialog box.
4. In the **When connecting to this resource, the content should come from** section of the **Virtual Directory** tab, select **A redirection to a URL**.
5. In the **Redirect to:** box, type the URL used by the IBM Web interface that you are redirecting to RWP. For example, to redirect the ClearQuest(was ClearCase) Web interface (**cqweb(was ccweb)**) to use an instance of RWP listening on port 81, type  
`http://hostname:81/ccweb/cqweb/login`  
 where *hostname* is the name of the host running RWP and IIS.
6. In the **The client will be sent to** section, select **The exact URL entered above**.
7. Verify that browsing to the URL `http://hostname/cqweb/login(was ccweb)` redirects you to the ClearQuest(was ClearCase) Web interface at the URL specified in Step 5 on page 46.

---

## Configuring RWP to use secure sockets

To provide secure communications between New ClearQuest Web clients and RWP, you can configure RWP to support the Secure Sockets Layer (SSL) protocol. To do this, you need to take the following steps:

1. Edit the RWP configuration files to enable SSL support.
2. Modify client URLs as needed to specify the HTTPS protocol.
3. Stop and restart RWP.

Procedures for configuring RWP to support SSL are the same as those for configuring any Apache HTTPD that uses the **mod\_ssl** module. These procedures are fully documented at the [mod\\_ssl.org](http://mod_ssl.org) Web site; a summary of the configuration steps is presented here.

The first step in using SSL is to obtain a certificate from a certification authority (CA). RWP includes the **openssl** program (installed in the RWP bin directory), which you can use to generate a self-signed certificate for testing purposes and also obtain a certificate and key from a CA. For more information on **openssl**, see the [openssl.org](http://openssl.org) Web site.

You can run **openssl** in the RWP bin directory to generate a self-signed certificate and a matching private key and then install them in the locations specified in Step 2 on page 47 and Step 3 on page 47 of the following procedure.

- On UNIX, use this **openssl** command line:

```
OpenSSL> req -new -x509 -nodes -keyout /opt/rational/common/rwp/conf/server.key \
-out /opt/rational/common/rwp/conf/server.crt
```

- On Windows, use this **openssl** command line:

```
OpenSSL> req -new -x509 -nodes -keyout ../conf/server.key -out ../conf/server.crt
```

**Note:** If you do not have the right to create files in the specified **-out** directory, this command will fail.

To configure RWP to accept SSL connections:

1. Configure RWP to include the `ssl.conf` configuration file. Uncomment this directive in `rwp.conf`:

```
Include conf/ssl.conf
```

**Note:** The `ssl.conf` file includes a **Listen** directive that specifies the port on which RWP will listen for HTTPS requests. The default is port 443. You can change this in the same way that you change the default HTTP port. If you want RWP to listen only for HTTPS requests, comment out the **Listen** directive in the `rwp.conf` file.

2. Install the certificate. The default location of the certificate file is specified in this directive in the `ssl.conf` file:

```
SSLCertificateFile rwp-root-dir/conf/server.crt
```

where *rwp-root-dir* represents the directory in which RWP is installed on the host. If you install the certificate file in a different location, make sure that this line in `ssl.conf` references that location.

3. Install the key. The default location of the key file is specified in this directive in the `ssl.conf` file:

```
SSLCertificateKeyFile rwp-root-dir/conf/server.key
```

If you install the key file in a different location, verify that this directive references that location.

4. Stop and restart RWP.

**Note:** To configure a Web application to use SSL, specify the **https** protocol in the application URL. For example:

```
https://RWP_host.domain/cqweb/login
```

---

## Other modifications to RWP

We do not recommend that you modify any RWP configuration files other than those described in this chapter. Some of the configuration options cannot be changed without adversely affecting the operation of RWP. Any configuration change not recommended in this chapter should be carefully evaluated before introducing them into a production environment.



---

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