The slide features a blue header with the IBM logo and the text 'IBM Software Group | Rational software'. The main content area is white with the title 'IBM® Rational® ClearQuest® 7.0' and subtitle 'Configuring and using e-mail notification'. Below the title is the 'Rational software' logo and a horizontal bar with various icons. The footer is blue with the '@business on demand.' logo, copyright information '© 2008 IBM Corporation', and the date 'Updated August 25, 2008'.

IBM Software Group | Rational software

**IBM® Rational® ClearQuest® 7.0**

Configuring and using e-mail notification

Rational software

@business on demand.

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Updated August 25, 2008

This module will cover configuring and using e-mail notification in IBM Rational ClearQuest versions 7.0 or higher

## Module objectives

- The following topics are covered in this module:
  - ▶ System requirements
  - ▶ Used technologies
  - ▶ Enabling e-mail notification in ClearQuest and ClearQuest Web
  - ▶ Configuring e-mail rules
- When you complete this module, you will be able to:
  - ▶ Set up ClearQuest to send out notifications by e-mail upon modification of records in your database



The following topics are covered in this module: the system requirements for using e-mail notification in ClearQuest and the underlying technologies used, enabling e-mail notifications in ClearQuest and ClearQuest Web, and how to configure e-mail rules to adapt e-mail notification to your business requirements.

Upon completion of this module, you will be able to set up ClearQuest to send out notifications by e-mail upon modification of records in your database.

## System requirements

- **SMTP server or Exchange server with MAPI protocol**
  - ▶ ClearQuest sends e-mail through such a server
  - ▶ There is no authentication or SSL support at this time
  - ▶ MAPI is only available on Windows®



In order to make use of ClearQuest's e-mail notification feature, you need to have an e-mail server available. ClearQuest supports the Simple Mail Transfer Protocol (SMTP), or the Mail Application Programming Interface (MAPI) in combination with a Microsoft® Exchange server. Please note that as of the time of writing, there is no support for secure SMTP connections over SSL or SMTP authentication. Also, keep in mind that since MAPI is a proprietary implementation by Microsoft, it is only available on Windows. Therefore, if you have ClearQuest clients running in UNIX or Linux operating systems, you will only be able to use an SMTP server for sending e-mail.

## Underlying technologies: SMTP

- SMTP: Simple Mail Transfer Protocol
  - ▶ Used for mail transfer between e-mail servers and from clients to e-mail servers
  - ▶ Uses TCP port 25
  - ▶ Provides various access control mechanisms (Relay Control)



The SMTP is one of the technologies involved in using e-mail notification in ClearQuest. SMTP is used for mail transfer between e-mail servers and for the submission of e-mail from a client to an e-mail server. SMTP runs on TCP port 25 and provides a number of mechanisms to prevent unauthorized access to e-mail servers to keep them from being used for spam.

## Underlying technologies: MAPI

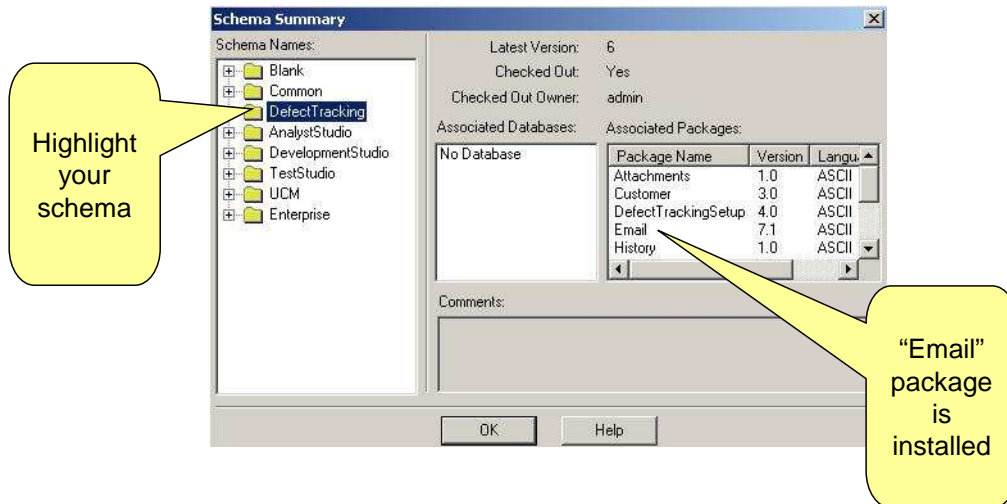
- MAPI: Mail Application Programming Interface
  - ▶ Proprietary implementation by Microsoft
  - ▶ Uses Microsoft Exchange
  - ▶ Uses TCP port 135 and other dynamically assigned ports



ClearQuest can use the MAPI, which is a proprietary implementation by Microsoft. It uses a Microsoft Exchange server. MAPI uses TCP port 135 and other dynamically assigned ports.

## Preparing ClearQuest for e-mail notification

- Check if e-mail package is installed in your schema

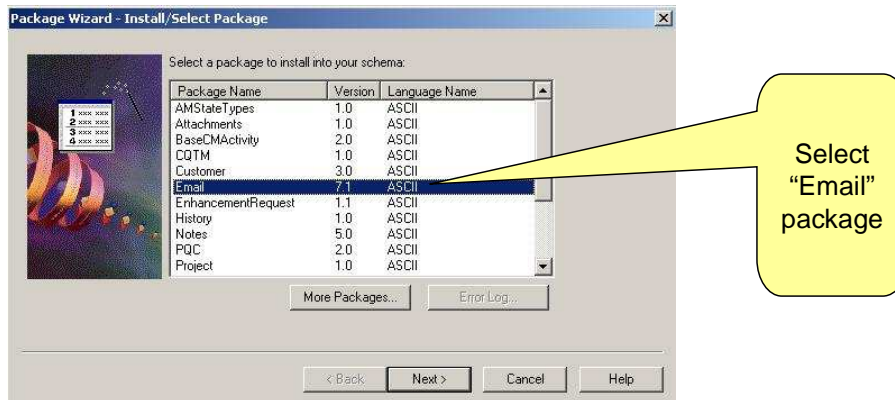


The "Email" package needs to be installed in your schema to use the e-mail notification function of ClearQuest. To determine whether you have the package installed, open your Schema Repository in the ClearQuest Designer and select "Schema Summary" from the "View" menu. On the left, highlight your schema. On the right, you will see a list of associated packages. If the "Email" package appears in that list, it is installed in your schema.

Note that the version you see in the window may differ from the version you see in this screen capture. If you do not see the package in this list, you will need to install the package yourself, which is described in the next step.

## Preparing ClearQuest for e-mail notification

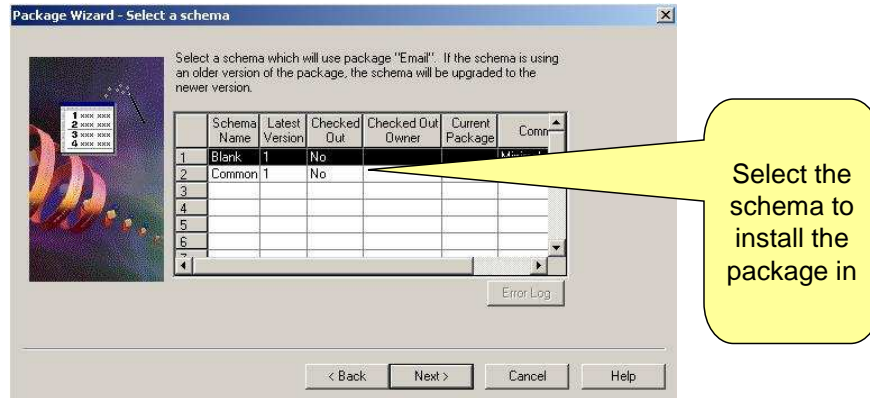
- Install the “Email” package in the schema



If the “Email” package is not installed in your schema, you can install it yourself from the ClearQuest Designer. From the “Package” menu, choose “Package Wizard”. In the following window (shown here), choose the “Email” package and click “Next”. Note that the version that you will see may differ from the one in this screen capture.

## Preparing ClearQuest for e-mail notification

- Select a schema

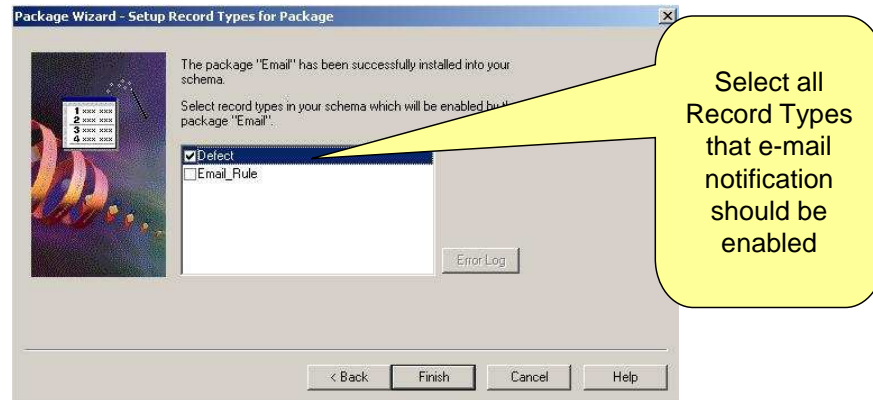


Next, you will be required to select the schema that you want to install the "Email" package in. All schemas that already have the package installed will be hidden. Highlight the schema you want to enable e-mail notification for and click "Next".



## Preparing ClearQuest for e-mail notification

- Enable a Record Type



The final step will allow you to select all Record Types that you would like to enable e-mail notification for. You will only be able to configure ClearQuest to send e-mail notification for changes made to records that you have selected here. If you do not want to enable all record types at this stage, you can enable additional Record Types at a later time. When complete, click "Finish".

The ClearQuest Designer will automatically check out your schema, and you will see an additional stateless Record Type called "Email\_Rule." Check your schema, and upgrade all user databases to finalize the preparation of ClearQuest for e-mail notification.

## Configuring e-mail rules

- E-Mail rules determine who receives an e-mail when specific actions are performed on records
- To edit e-mail rules, a user needs to have Schema Designer privileges



Now that you have completed the preparation of ClearQuest for e-mail notification, you will need to configure e-mail rules, which determine who will be notified by e-mail once a specific action has been performed on record. E-mail rules are realized through "Email\_Rule." In order to create or modify e-mail rules, a ClearQuest user needs to have at least Schema Designer privileges.

## Configuring e-mail rules

The screenshot shows the 'Submit Email\_Rule' dialog box with the following fields and callouts:

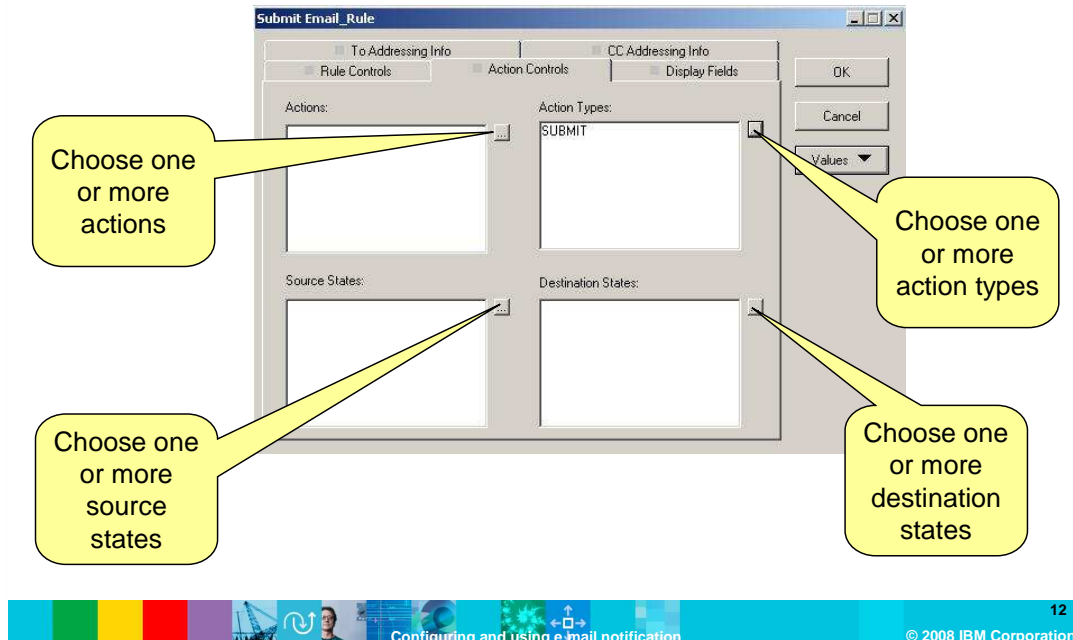
- Enter a descriptive name:** Points to the 'Name' field containing 'New Defect Submissions'.
- Choose a record type:** Points to the 'Record Type' dropdown menu set to 'Defect'.
- Check to activate rule:** Points to the 'Active Rule' checkbox, which is checked.
- Choose fields to monitor for changes:** Points to the 'Fields to Check for Change' list box, which is currently empty.

Other visible elements include the 'Filter Query' field, 'Operator' (And/Or) radio buttons, and 'OK', 'Cancel', and 'Values' buttons.

To create a new e-mail rule, open your ClearQuest Database and select the “Email\_Rule” record type from the drop down. This will display a form like the one in the screenshot. On the first tab you specify some general properties of the new e-mail rule, such as the name and the record type that this e-mail rule should apply for. Choose a record type.

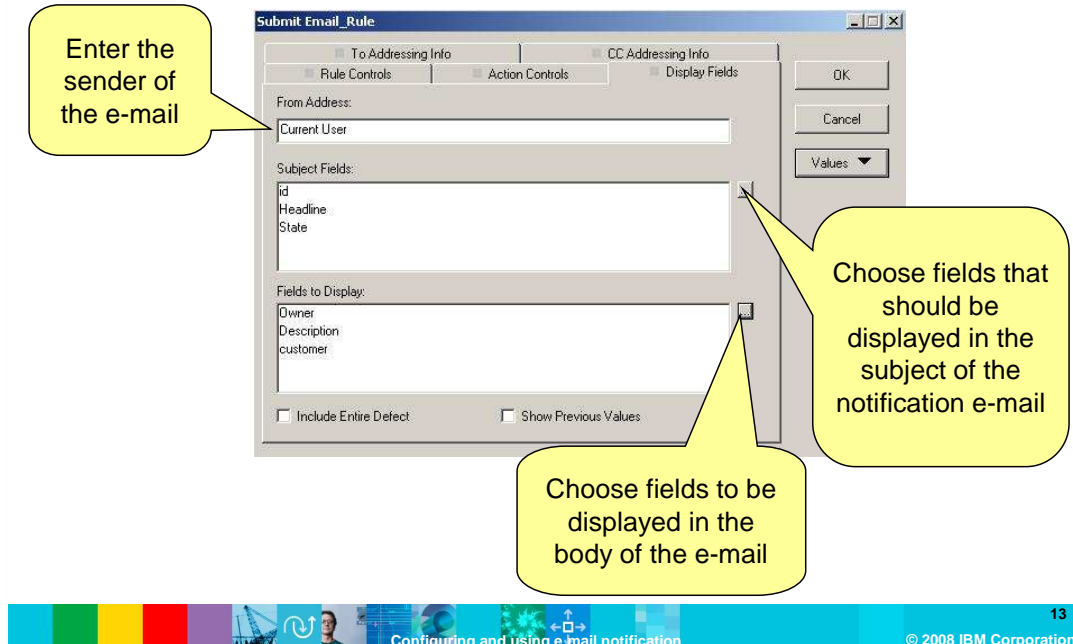
You can also choose from the list of all fields belonging to the record type that you wish to monitor for changes. In addition, you can specify a filter query which is used to limit the list of records that this e-mail rule will be applied to. Check the box labeled “Active Rule.” Finally, choose an operator to logically link the conditions you define.

## Configuring e-mail rules



On the second tab, “Action Controls,” you can configure the actions or states that this e-mail rule should apply for. You can select either “Actions” or “Action Types.” Alternatively, you can specify one or more source or destination states. With this, you can configure ClearQuest to only send an e-mail when a record moves into the “Closed” state and not on any other state.

## Configuring e-mail rules



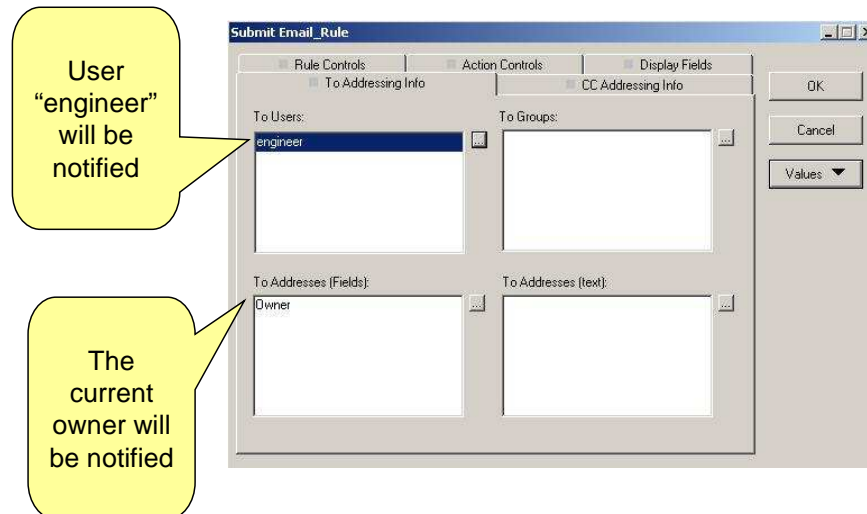
On the third tab, “Display Fields,” you can configure what the e-mail will look like and what information it contains.

In the line “From Address,” you can enter an e-mail address that will be used as the sender of the notification e-mails. You can also enter “Current User,” which causes ClearQuest to automatically insert the e-mail address of the user that is triggering the e-mail notification.

You can choose the fields that should be displayed in the subject of the e-mails. Do not include too many fields here, as the subjects may get too long.

You can also choose the fields that should be displayed in the body of the e-mail. If you check the “Include Entire Defect” box, all fields of the record type will be displayed in the body of the e-mail. If you check the “Show Previous Values” box, the e-mail will include both the current field value and the value before.

## Configuring e-mail rules



Now that you have configured when ClearQuest sends an e-mail notification and what information this e-mail should contain, all you need to configure is who should be receiving these notifications. This is done on the “To Addressing Info” and “CC Addressing Info” tabs. In the field labeled “To Users”, you can select from all users in the ClearQuest user database who should be notified. The field labeled “To Groups” allows you to pick one or more groups whose members will be notified. In the field “To Addresses (Fields),” you can select a field that contains either a ClearQuest username or an e-mail address. If the field that you select here contains a ClearQuest username, ClearQuest will retrieve the e-mail address of that user. Finally, in the field “To Addresses (text)” you can enter one or more e-mail addresses that the notifications will be sent to.

In the scenario depicted in the screenshot, a notification will be sent to the user “engineer” and to the user who is the current owner of a record. This concludes the configuration of e-mail rules. You can now configure your ClearQuest clients.

## Configuring the local ClearQuest clients

- Configuration needs to be done on all clients for all users individually
- Use of MAPI requires that Microsoft Outlook® be installed locally
- Use of MAPI also requires that Collaboration Data Objects be installed not newer than version 5.0.2448.0 or 5.5.2448.0 (Outlook 2002 Service Pack 1)
- Create a MAPI profile on the current machine



Before you configure your ClearQuest client to send e-mail notification, you should take a few things into consideration.

Since ClearQuest does not send e-mails from a central point but rather from the client on a user's workstation, you need to configure the client on all workstations individually for all users.

If you wish to use MAPI as your e-mail provider, you need to have Microsoft Outlook installed on the same machine as ClearQuest. You also need to install the Collaboration Data Objects (CDO) that come as an optional install as part of the Microsoft Excel installation.

Finally, the latest versions of the CDO that will work with ClearQuest are the ones that came with Microsoft Outlook 2002 Service Pack 1. Please keep in mind that MAPI is only available on Microsoft Windows operating systems and not on UNIX or Linux platforms.

## Configuring the local ClearQuest clients



Choose  
whether to use  
SMTP or MAPI

While the screenshots for the following steps show the configuration of e-mail notification in the ClearQuest client, the steps are almost the same for the configuration of the Eclipse-based ClearQuest RCP client and Eclipse with the ClearQuest plug-in. Where differences exist, they are pointed out.

To start the configuration of the ClearQuest client, log in to a user database of your choice and choose “E-mail options” from the “View” menu in the ClearQuest client. In the RCP client, select “E-mail options” from the “Tools” menu.

Select the e-mail provider you wish to use, either SMTP or MAPI. Make sure you check the “Enable E-mail notification” box. Click “Next.”



## Configuring the local ClearQuest clients

- For SMTP:

Choose the Server Address for an outgoing SMTP Server, and your e-mail address. Your administrator can give you these values.

Outgoing SMTP Server:  
mailserver.company.com

Your E-mail Address:  
user@company.com

< Back Finish Cancel Help

Enter the host name or IP address of the SMTP server

Enter your e-mail address to be used as the sender

If you chose SMTP as your e-mail provider, you will be prompted to provide both the host name or IP address of the SMTP server that you would like to send e-mail notification through, as well as your e-mail address. This address will appear as the sender of all e-mail notification triggered by the current (Windows) user on this workstation. Click "Finish."

## Configuring the local ClearQuest clients

- For MAPI:



Choose the MAPI profile you have configured on your machine



If you chose MAPI as your e-mail provider, you need to select your locally created MAPI profile from the dropdown list. In the RCP client, you will be presented with a text input field where you need to enter the name of the MAPI profile that should be used. Click “Finish.”

This concludes the configuration of e-mail notification for ClearQuest. If you are using ClearQuest Web instead of or in addition to locally installed clients, you need to make additional changes, which will be discussed on the following slides.

## E-mail notification in ClearQuest Web

- For SMTP:

Select SMTP

Enter the host name or IP address of the SMTP server

Security Options Reporting Options Application Options Email Options

Sending Email Status: Active  
(default: Inactive)

Mail Transport Type: SMTP  
(default: MAPI)

MAPI Mail Server:   
(default: none)

MAPI Mailbox Alias:   
(default: none)

SMTP Host: smtp.company.com  
(default: localhost)

SMTP Reply To: cqweb@company.com  
(default: none)

SMTP Web Server Real Name: ClearQuest Web  
(default: none)

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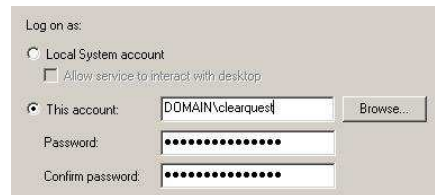
If you are using ClearQuest Web and want to have your users notified about changes to records, you need to enable e-mail notification. This needs to be done once by a ClearQuest user who has Super User privileges (usually the “admin” user). All ClearQuest users accessing ClearQuest Web will then have e-mail notification turned on.

To enable e-mail notification, log in to ClearQuest Web and click the “Site Configuration” link at the top of the page. Select the “Email Options” tab to display the settings for e-mail notification. From the drop-down list “Sending Email Status,” select “Active,” choose “SMTP” as the Mail Transport Type and fill in the host name or IP address of the SMTP server that you would like to use in the field labeled “SMTP Host”. The e-mail address you enter in the field “SMTP Reply To” will be used as the sender of all e-mail notifications, unless the user that triggers a notification (occurring when the user modifies a record) has an e-mail address configured in their ClearQuest user profile. In that case, the value in the field “SMTP Web Server Real Name” will also be displayed as the real name of the sender of the notification.

## E-mail notification in ClearQuest Web

- For MAPI:

- ▶ 1. Join the machine with ClearQuest Web to the domain
- ▶ 2. Change the Log On settings of the *IBM Rational ClearQuest Registry Server Service* to the Exchange domain user



- ▶ 3. Make the domain user a member of the local *Power Users* or *Administrators* group



Using MAPI for e-mail notification in ClearQuest Web requires several changes to the configuration of ClearQuest and Windows.

First, join the machine where ClearQuest Web is installed to the domain the exchange server is on.

Then, go to the “Services” panel in the “Administrative Tools” section of the Windows Control Panel. Right-click “IBM Rational ClearQuest Registry Server” and select “Properties”. Switch to the tab labeled “Log On” and select “This account” under the “Log on as:” heading. Enter the login information for the domain user whose Exchange mailbox you will be using and click OK.

Next, make the same domain user a member of the local “Power Users” or “Administrators” group.

## E-mail notification in ClearQuest Web

- ▶ 4. Create a MAPI profile
- ▶ 5. Restart the *IBM Rational ClearQuest Registry Server* service
- ▶ 6. Configure ClearQuest Web through *Site Configuration*

The screenshot shows the 'Email Options' tab in the ClearQuest Web configuration interface. The fields are as follows:

- Sending Email Status:** Active (default: Inactive)
- Mail Transport Type:** MAPI (default: MAPI)
- MAPI Mail Server:** exchange.company.com (default: none)
- MAPI Mailbox Alias:** clearquest (default: none)
- SMTP Host:** (default: localhost)
- SMTP Reply To:** (default: none)
- SMTP Web Server Real Name:** (default: none)

Callouts from the image:

- Select MAPI:** Points to the Mail Transport Type dropdown menu.
- Enter the Mailbox Alias:** Points to the MAPI Mailbox Alias text input field.
- Enter the host name or IP address of the Exchange server:** Points to the MAPI Mail Server text input field.

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Log in to the machine where ClearQuest Web is installed as the domain user whose Exchange account you are using. Create a MAPI profile using the “Mail” pane in the Windows Control Panel. Open Microsoft Outlook to verify configuration was successful.

Next, log back in to the machine as an Administrator and restart the IBM Rational ClearQuest Registry Server service.

Finally, log in to ClearQuest as a user with Super User privileges and select “Site Configuration” from the top navigation menu. Select the “Email Options” tab. Select “Active” from the “Sending Email Status” dropdown, and choose “MAPI” as the Transport Type. In the MAPI Mail Server field, enter the host name or IP address of the Exchange server, and, in the field labeled “MAPI Mailbox Alias,” enter the alias of MAPI mailbox as defined when you created the Exchange account.

Click “Save.” This concludes the configuration steps for Email Notification with MAPI for ClearQuest Web.

## Configuring e-mail notification on Linux® and UNIX®

- 1. Configuring the RCP Client
- 2. Configuring ClearQuest Web



This section of the module describes the steps required to configure ClearQuest and ClearQuest Web on Linux or UNIX operating systems to use e-mail notification.

On Linux and UNIX operating systems only SMTP is available as a mail transport provider.

The configuration of the RCP client is the same as it is on Windows. The configuration of ClearQuest Web requires additional steps.

## Configuring the RCP Client on Linux and UNIX



To configure e-mail notification in the RCP Client on Linux or UNIX, select “E-mail Options” from the “Tools” menu. Check the “Enable E-mail notification” box. The E-mail provider defaults to SMTP. Click “Next” to continue.

## Configuring the RCP Client on Linux and UNIX

Change Email Options

**Configure SMTP Mail Server**

Choose the Server Address for an outgoing SMTP server, and your email address. Your administrator can give you these values

Enter the host name or IP address of the SMTP server

Outgoing SMTP Server:  
smtp.company.com

Your Email Address:  
john.doe@company.com

Enter your e-mail address

< Back   Next >   Finish   Cancel

At the next screen, provide the host name or IP address of the SMTP server you would like to use to send e-mails and the e-mail address that will be used. Click “Finish.”



## Configuring ClearQuest Web on Linux and UNIX

- 1. Identify the owner of the Request Manager process
- 2. Create the necessary directories and files
- 3. Modify the SendMail file
- 4. Verify settings in Site Configuration



The configuration of ClearQuest Web on Linux or UNIX consists of four basic steps: identifying who owns the Request Manager process, creating directories and files, modifying the SendMail file that holds the configuration settings, and verifying these settings in Site Configuration.

## Configuring ClearQuest Web on Linux and UNIX

- 1. Identify the owner of the Request Manager process
  - ▶ `ps -ef | grep request`
  - ▶ `nobody 10272 17939 0 01:00 ? 00:00:34 /opt/rational/common/IBMJava2-142/jre/bin/java -Xms64m -Xmx256m -cp config:requestmgr.jar:../lib/cqjni.jar:../lib/logging.jar:`



To identify which user owns the Request Manager process, run `ps -ef` and `grep` for “request”. This should return a process similar to the one shown on the slide. The important part is the first word, which in this case is “nobody”. This means that the user “nobody” owns the Request Manager process. You may have changed the configuration of ClearQuest so that the user is no longer “nobody,” and instead is “clearquest” or something similar. Write down that user name.

## Configuring ClearQuest Web on Linux and UNIX

- 2. Create the necessary directories and files
  - ▶ Identify the home directory of the user owning the Request Manager process
  - ▶ In the home directory of that user, run
    - `mkdir -p .Rational/.Registry/ClearQuest`
    - `touch .Rational/.Registry/ClearQuest/SendMail`
    - `chmod -R u+rwx .Rational`



After you have determined which user owns the Request Manager process, you need to find out their home directory.

- On a terminal, change to that user's home directory and run `mkdir -p .Rational/.Registry/ClearQuest` to create the required directory structure.
- Using the "touch" command, create a file called "SendMail", making sure you type an uppercase S and an uppercase M.
- Finally, you need to give the owner of the Request Manager process read, write and execute rights on the entire Directory Structure and the "SendMail" file.

## Configuring ClearQuest Web on Linux and UNIX

### ▪ 3. Modify the SendMail file

.Rational/.Registry/ClearQuest/SendMail

```
SendActive: 1
ReplyTo: clearquest@company.com
SMTPHost: smtp.company.com
```



Open the “SendMail” file in an editor of your choice. You will need to add three lines in that file. It is important that you pay close attention to the spelling and punctuation or the settings will not work.

The first line, “SendActive:” can be a 1 or a 0. 1 means that the e-mail notification is on, 0 means that it’s off.

The second line, “ReplyTo:” stores the e-mail address that ClearQuest Web will use as a sender of e-mail notifications.

The third line, “SMTPHost:” is used to specify the host name or IP address of the SMTP server to be used for sending e-mail notifications.

Save the file when you are done.

## Configuring ClearQuest Web on Linux and UNIX

### ■ 4. Verify settings in Site Configuration

Security Options	Reporting Options	Application Options	Email Options
Sending Email Status: Active (default: Inactive)			
Mail Transport Type: SMTP (default: MAPI)			
MAPI Mail Server: (default: none)			
MAPI Mailbox Alias: (default: none)			
SMTP Host: smtp.company.com (default: localhost)			
SMTP Reply To: clearquest@company.com (default: none)			
SMTP Web Server Real Name: (default: none)			

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Configuring and using e-mail notification

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To verify the settings in ClearQuest Web:

- Log in to ClearQuest Web and click “Site Configuration” from the top navigation bar.
- Switch to the “Email Options” tab to check if the settings you have made in the “SendMail” file are correctly represented here.
  - If so, this concludes the configuration steps for e-mail notification in ClearQuest Web on Linux or UNIX.
- If the settings displayed are different, make sure you have properly set the permissions in Step 2.
- If it still fails to display correctly, contact Rational Client Support for assistance.

## Summary

- Configuration for RCP and native client needs to be done for every user
- Configuration for ClearQuest Web needs to be done once
- MAPI only on Windows, SMTP is available across all platforms



In summary, this module covered the basic concepts behind e-mail notification and how ClearQuest uses them. You should know how to configure e-mail notification on Windows and on Linux/UNIX platforms for the RCP client, the native client and ClearQuest Web. Remember that the configuration for the RCP and the native client needs to be done for every user individually, and that MAPI is only available on Windows.

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