User Guide

CaliberRM™

Collaborative Requirements Management System

CORPORATE HEADQUARTERS

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Chapter 1: Introduction

ABOUT CALIBERRM

CaliberRM is a powerful, state-of-the-art requirements management system that enables project teams to deliver higher quality applications that meet end-user specifications. CaliberRM enables teams to fully define, manage and communicate changing requirements. Changes to requirement data are recorded and stored in CaliberRM's database, providing reliable and up-to-date information for effective requirements-based application development and testing.

CaliberRM is comprised of the components listed below.

Component	Description
CaliberRM	Requirements Management System
Framework Administrator	Controls administrative functions for CaliberRM projects
Document Factory	Generates customized documents from user-defined templates
Requirement Viewer	Provides a detailed view of a requirement without launching the full product
StarTeam Toolbar	Launches CaliberRM, Framework Administrator and Document Factory from the system tray
RM Import Utility	Imports a project from a file previously created by the CaliberRM Export utility
RM Export Utility	Exports a project from CaliberRM into an ASCII file, which may then be imported to another application
Diagnostic Tool	Provides current status information to aid in troubleshooting
Help	Help files for Framework Administrator, CaliberRM Client and Web Client

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The two main components of CaliberRM are the Framework Administrator and CaliberRM. The Framework Administrator is the component that maintains administrative information, such as users and groups. CaliberRM is the requirement management component that administers projects, requirements and other CaliberRM custom utilities. Additionally, there are several integrated third-party products that, as a whole, provide a complete solution to application lifecycle management, from developing requirements to testing the application.

WHAT'S NEW IN THIS VERSION

The following table provides information on the new features and enhancements in this version.

Feature	Description	Detail
Internationalization	CaliberRM now supports the Unicode character sets.	• Through the support of Unicode character sets, CaliberRM now provides character fidelity regardless of language. CaliberRM customers can now manage requirements in any language.
Electronic Signature for Baselines	Allows authorized users to sign a baseline.	• Delivered in response to requests from customers in regulated industries, as well as those with rigorous internal process audits. • The electronic simulation of a "sign off sheet" that can be used for multiple purposes, largely related to the approval of a set of requirements prior to development work taking place. • Baseline administrators are created to manage baseline signatures.

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Feature	Description	Detail
Baseline Administration	New level of administrators called Baseline Administrators added.	• Baseline administrators are created on the user's Password tab in the Framework Administrator. • Baseline Administrators are created to manage all aspects of baseline maintenance. CaliberRM Administrators no longer have baseline maintenance capabilities. • When a baseline is selected in CaliberRM, the baseline description is displayed below the project description.
Improved Project, Group & User Management	Project membership is kept synchronized with group membership.	• If you add a new user to a group in a project, that user is assigned to all projects that contain the group. The same rule applies when removing a user from a group.
Auto Disable	Administrators can limit the number of times a user can attempt to login.	• After a certain number of unsuccessful login attempts, a user's account is disabled until contacting the administrator.
Silent Installation	CaliberRM now supports silent or unattended client installations.	• The CaliberRM client installation program now supports silent client installations and upgrades.
StarTeam Message Broker (MPX)	Allows you to publish information about MPX events, such as creating a requirement.	• Requirement additions appear in the user's requirement tree even if the parent node has already been expanded. • Requirement deletions are removed from the user's requirement tree even if the parent node has already been expanded. • Clients cache requirement data as it is retrieved from the server, the next time those requirements are selected, they are retrieved from local cache. If a requirement is changed by someone else, the client retrieves the latest data from the server. • If the StarTeam Message Broker is not used: o CaliberRM will function without any issues. o you can refresh the project to see requirements that are added or deleted.

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Feature	Description	Detail
Support for Mercury's TestDirector Domains in 7.6 and later	The integration supports creating traces to tests in domains.	• Mercury Interactive added domains to TestDirector as a way to further manage test projects. CaliberRM now supports those domains.
Integration with Microsoft's Visual Studio .NET	Allows you to view requirements in the context of the development environment.	• Delivers live requirement information directly within the IDE. • Requirements data can be tailored specifically to enable you to work with only those requirements that are important to you.

TECHNICAL ENHANCEMENTS

The following table provides information on the new technical enhancements in this version.

Enhancement	Description
Integrations	The location of the CaliberRM executable is stored in the registry for any integration to use. The path is HKEY_LOCAL_MACHINE\Software\Borland\CaliberRM.
Together integration	The Together vendor add-in .dll file is installed in the CaliberRM directory.
New installs	Default paths have been updated to reflect the Borland name. Default installation paths are now located at c:/Program Files/Borland. In addition, the CaliberRM program icon is now the new Borland suite icon. The requirement icon has not changed.

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Enhancement	Description
Help > About	The server name and IP address a client is logged onto have been added to the Help > About > Additional Info menu in the Framework Administrator and CaliberRM clients.
CaliberRM SDK versioning	The CaliberRM SDK version number is now synchronized with the CaliberRM version number.
Project Refresh	You can refresh a project using the F5 key in the Windows client while maintaining focus on the item that is selected.
Glossary Enhancement	You can hover over a glossary term to see the definition in a balloon tip. *Note: The display may cut off after 256 characters.*
User-Defined Attribute Enhancement	You can hover over a UDA label to see its description.

CALIBERRM DOCUMENTATION

This package includes several forms of information to help you learn CaliberRM.

The **User Guide** contains complete details about using CaliberRM.

The **Installation Guide** contains system requirements and instructions on how to install Framework Administrator, CaliberRM, Spell Checker dictionaries, Web components, CaliberRM Datamart & Datamart Explorer, and Network Install and Upgrade.

The **Help System** contains all the information in the User Guide, optimized for use online.

Sample Templates help you create your own templates for Document Factory.

Sample Databases allow you to log on to CaliberRM and learn its features and functions in a non-production environment.

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The **CaliberRM Tutorial** is a condensed version of the User Guide, designed to get users started quickly in CaliberRM.

CaliberRM **White Papers** provide information on CaliberRM integrations and how to use them.

ABOUT THIS MANUAL

This manual provides detailed information about the CaliberRM tools and features and is intended for use as a reference in everyday work. The chapters are presented in an order that helps the new user understand the Framework Administrator and CaliberRM quickly; starting with basic functionality and progressing to more advanced features. This manual contains the following sections:

- **Administrator Section:** This section describes the user interface, tools and features of the Framework Administrator module. This section is comprised of Chapters 1-8.

- **CaliberRM Administrator Section:** This section describes the administrative commands of the CaliberRM Client module. This section is comprised of Chapters 9-11.

- **CaliberRM User Section:** This section describes the CaliberRM user interface and describes the commands, tools and utilities available to a CaliberRM non-administrative user. This section is comprised of Chapters 12-28.

- **Appendices:** This section contains additional supplemental information.

- **Glossary:** This section contains a brief description of terms used in the Framework Administrator and CaliberRM systems.

CaliberRM documentation assumes you have a working knowledge of Microsoft Windows NT4 or 2000 operating system and its conventions, including standard menus and commands. If you are new to Windows, you can get help with these techniques by accessing Microsoft Windows Help. To get help, choose **Start > Help** from the **Start** menu on the Windows desktop.

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CONVENTIONS USED IN THIS MANUAL

This manual uses the following typographical conventions and notations:

Convention	Purpose	Example
File > Open Project	Indicates cascading menu commands.	Select **File > Open Project** to open a project.
Bold	Used for menu names, menu commands, button or field names.	Click the **Details** tab.
"**Bold in Quotes**"	Text to be entered.	Type "**Admin**" as the userid.
Note:	Used to direct your attention to important information.	*Note: The command will...*
Italics	Used in notes and step headers and as parameter placeholders. Replace the indicated text with the appropriate real name or value when using the command.	*Note: The default is...* or Calibrrm -p *\<project>*
⚠	Indicates that a step you are about to perform may have unexpected results.	Warning! If you perform this step....
Buttons in margins	Helps you learn the buttons' functions.	1. Click the **Save** button. 💾

BORLAND SUPPORT

Borland offers a variety of support options. These include free services on the Internet, where you can search our extensive information base and connect with other users of Borland products. In addition, you can choose from several categories of support, ranging from support on installations of the Borland product to fee-based consultant-level support and extensive assistance.

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For more information about Borland's support services, see our web site at **http://www.borland.com/devsupport/**

From the Web site, you can access many newsgroups where CaliberRM users exchange information, tips and techniques.

Refer also to the Borland Community site at **http://community.borland.com**. It provides access to lots of information, articles, code examples, and upcoming news about CaliberRM.

When contacting support, be prepared to provide complete information about your environment, the version of the product you are using, and a detailed description of the problem.

For support on third-party tools or documentation, contact the vendor of the tool.

SYSTEM REQUIREMENTS

For details about the system requirements for CaliberRM, please refer to the CaliberRM Installation Guide.

INTERNATIONALIZATION

Through the support of Unicode character sets, CaliberRM now provides character fidelity regardless of language. You can now manage requirements in any language. Contact your System Administrator for instructions on setting your regional settings.

LOGGING ON

To log on to a CaliberRM component:

1. Select **Start > Programs > CaliberRM**, then select the component you want to launch. The **Login** screen is displayed.

2. Enter your server **Server** name, **User** name and **Password**. The default User
    name and Password are **admin**.

3. Click **Logon**. CaliberRM launches the component and places the StarTeam
    Toolbar icon in your system tray.

STARTEAM TOOLBAR

The StarTeam Toolbar (referred to later as simply "the Toolbar") is a component of
the StarTeam and CaliberRM products that enables you to log on to CaliberRM and
StarTeam using only one login. It makes it easier for you to log on to multiple
servers and to launch different programs from a single location.

The Toolbar is automatically populated with shortcuts for the tools of the StarTeam
and CaliberRM products that are installed on your workstation. Because the
Toolbar uses the standard Windows program shortcut feature, you can easily add
any other program as a tool for quick launch.

The Toolbar enables you to:

*   Specify which portions of its user interface are visible (none, system tray only,
    window only, or system tray and window).

*   Cache the user name and password used to log on to each StarTeam or Caliber
    server, making it easier for you to log on to multiple servers, and reducing the
    number of times you must log on to the same server to perform certain
    operations. (There is even an option for using the same user name and
    password for each server, so you do not have to log on to other servers where
    that user name and password is valid.)

*   View the cached server/user associations.

*   Add program shortcuts as tools on the Toolbar, so you can easily locate and
    start those tools. (You can also modify or delete an existing tool.)

*   Display the Toolbar's help information or version information.

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When you launch a component of CaliberRM, the Toolbar icon is displayed in the system tray.

*StarTeam
Toolbar icon*

When you right-click the icon, a pop-up menu is displayed.

Open

CaliberRM
Document Factory
Framework Administrator
TDConnect.exe
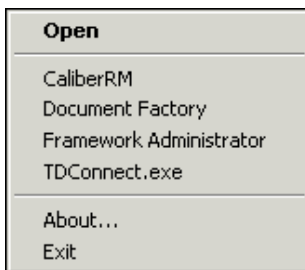
About...
Exit

Click **Open** to open the main **StarTeam Toolbar** window, displayed on the following page. You can also double-click the icon to open the Toolbar.

Click a component name to launch the program.

Click **About** to view details about the Toolbar.

Click **Exit** to exit the Toolbar.

STARTEAM TOOLBAR WINDOW

The main Toolbar window enables you to change toolbar options.

Toolbar Options

- **Display systray icon:** Determines if the StarTeam Toolbar icon is displayed in the system tray. A check in the box indicates the feature is enabled.

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Click the icon to launch a component.

Right-click to add a tool shortcut.

Click to Expand or Collapse the main window.

Click for help on the Toolbar.

Click to display the About dialog box.

Click to exit the Toolbar.
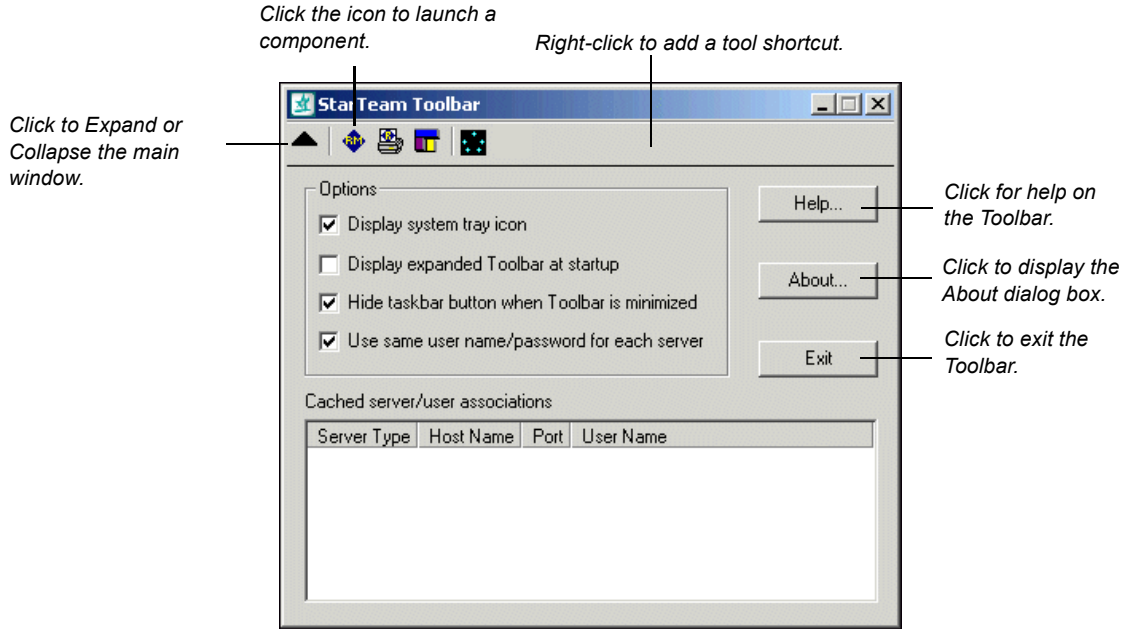
- **Display expanded Toolbar at startup:** Displays the full Toolbar window on startup. A check in the box indicates the feature is enabled.

- **Hide from taskbar when minimized:** Determines whether the StarTeam Toolbar icon is displayed in the taskbar when the toolbar is minimized. A check in the box indicates the feature is enabled.

- **Use same username/password for each server:** Enables the Toolbar to use the same username and password for each component. A check in the box indicates the feature is enabled.

- **Server List:** This displays all of the servers that are cached by the StarTeam Toolbar. For each server, the product icon, Server Type, Host Name, Port, and User Name are displayed.

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Adding a Tool Shortcut

Note: The StarTeam Toolbar uses the standard Windows shortcut wizard for add-ing tool shortcuts. Therefore, if someone other than yourself logs in using his/her Windows username and installs CaliberRM, the first time you log in using your username, you may not see any shortcuts on the Toolbar. You must add CaliberRM, its components and StarTeam shortcuts using the method below.

Note: These tools are not available for single login, just quick launch.

To add a tool shortcut on the menu:

1. Right-click on the toolbar.
2. Select **Add Tool** from the pop-up menu.
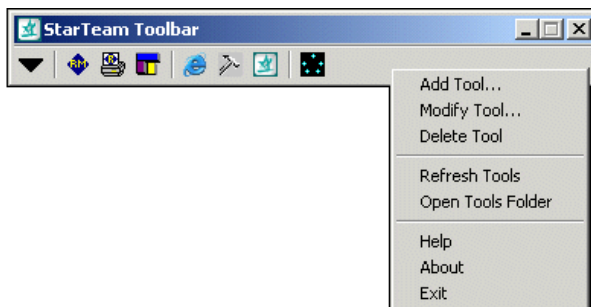
The **Windows Shortcut Wizard** is launched.
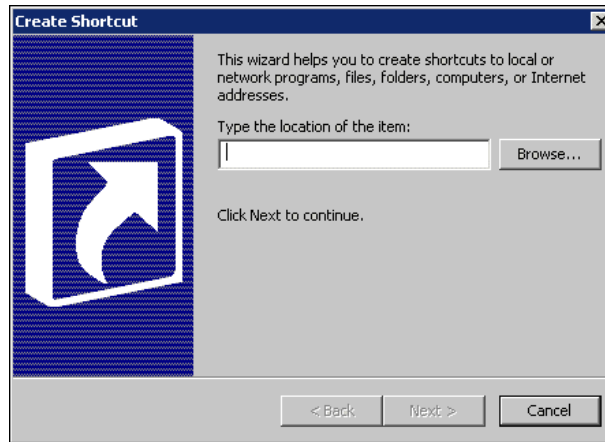
3. Enter the location of the executable you want a shortcut for, or click the **Browse** button to navigate to it.

4. Click **Next**. The **Select Title for this program** screen is displayed.

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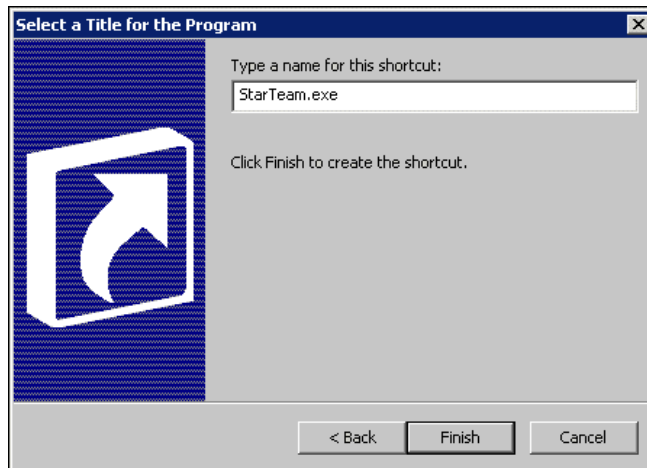
5. Enter a name for the shortcut and click **Finish**.

6. Right-click the toolbar and select **Refresh Tools**.

   The icon now appears in the toolbar and can be launched from the StarTeam Toolbar.

new shortcut

Modifying a Tool Shortcut

To modify a shortcut:

1. Right-click on the tool icon of the shortcut you want to modify.

2. Select **Modify Tool**. The **Shortcut** properties window is displayed as shown on the following page.
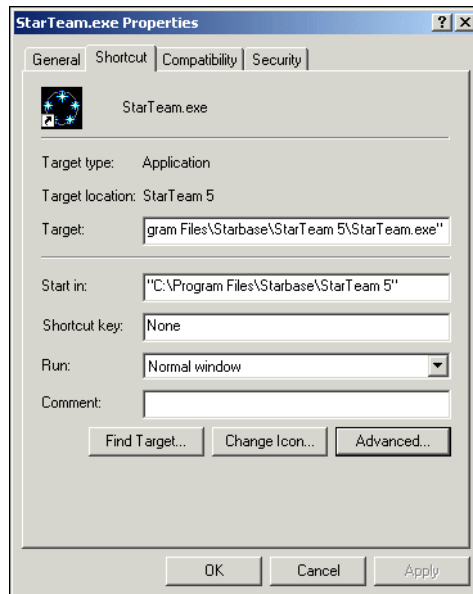
3. Make changes as necessary and click **OK**. The window closes and the changes are applied.

Deleting a Tool Shortcut

To delete a shortcut:

1. Right-click on the tool icon of the shortcut you want to delete.

2. Select **Delete Tool**. The shortcut is deleted.

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STARTEAM MESSAGE BROKER (MPX)

The StarTeam Message Broker, or MPX, allows you to publish information about MPX events, such as creating or deleting a requirement.

Benefits of MPX include:

*   Requirement additions appear in the requirement tree even if the parent node has already been expanded.

*   Requirement deletions are removed from the requirement tree even if the parent node has already been expanded.

*   Clients cache requirement data as it is retrieved from the server, the next time those requirements are selected, they are retrieved from local cache. If a requirement is changed by someone else, the client retrieves the latest data from the server.

If the StarTeam Message Broker is not used:

*   CaliberRM will function without any issues.

*   you can refresh the project to see requirements that are added or deleted.

Chapter 2: Framework Administrator Overview

OVERVIEW

The Software Quality Management (SQM) Framework (Framework Administrator) is a central communications framework for CaliberRM and integrated products. The Framework Administrator controls administrative functions, including users, groups, projects, licensing, security and automatic notification.

Before users can begin entering requirements into CaliberRM, you must first define projects and set up users and groups in the Framework Administrator.

USER INTERFACE

The Framework Administrator contains four views, each of which allows you to perform specific tasks. The views available are:

- Project View
- User View
- Group View
- User Connections Monitor View

Project View

The Project View lists all projects and displays specific information for a selected project, including general project information, users and groups assigned to the project, project baselines and project integrations. The Project View is shown on page 50.

Projects are discussed in more detail in "Projects" on page 49 .

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User View

The User View lists all users and displays specific information for a selected user, including name, department, phone and fax numbers, email address, group membership and password. The User View is shown on page 69.

Users are discussed in more detail in "Users and Groups" on page 69.

Group View

The Group View lists all groups and displays specific information for a selected group, including name, description and members. The Group View is shown on page 81.

Groups are discussed in more detail in "Users and Groups" on page 69.

User Connections Monitor View

The User Connections Monitor provides information to CaliberRM administrators about the identity and the number of connected users for the CaliberRM server.

The Monitor View is shown and detailed on page 46.

MENUS

Within the Framework Administrator, there are six menus: File, Edit, View, Tools, Report and Help. Each menu contains items that enable you to perform certain functions. The menus are described in more detail in the following sections.

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File Menu

The File menu contains several commands related to administrative tasks.
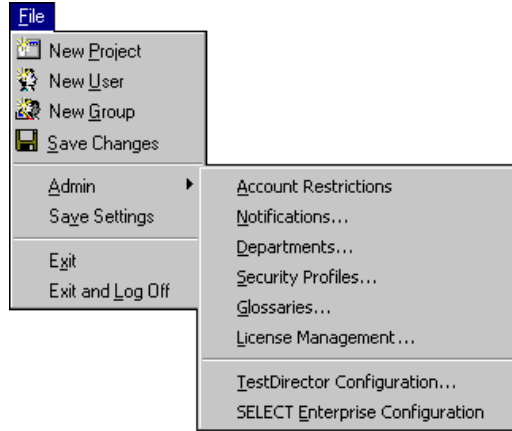
The commands perform the following functions:

- **New Project:** Creates a new project.

- **New User:** Creates a new user.

- **New Group:** Creates a new group.

- **Save Changes:** Saves the changes you have made to the selected project, user or group.

- **Admin:** Displays the Admin sub-menu, which contains the following commands for performing administrative tasks:

  - **Account Restrictions:** Displays the Account Restrictions dialog box, which allows you to set parameters for password administration. See page 32 for more information.

  - **Notifications:** Displays the Notifications dialog box, which allows you to set parameters necessary to enable automatic email notification. See page 34 for more information.

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- **Departments:** Displays the Departments dialog box, which allows you to modify the department list for users. See page 35 for more information.

- **Security Profiles:** Displays the Security Profiles dialog box, which allows you to create, modify and delete security profiles. See page 89 for more information.

- **Glossaries:** Displays the Glossaries dialog box, which allows you to create, modify and delete project glossaries. See page 62 for more information.

- **License Management:** Displays the License Management dialog box that allows you to configure and manage your user licenses. See page 37 for more information.

- **TestDirector Configuration:** Displays the TestDirector Configuration dialog box, which allows you to set up the host, database and login information for the integration with TestDirector. The configuration properties are applied to all CaliberRM projects. See "Enabling Other Integrations" on page 422 for information about how to enable the TestDirector integration.

- **Select Enterprise Configuration:** Displays the Select Enterprise Configuration dialog box, which allows you to enable or disable the integration with Select Enterprise. The configuration properties are applied to all CaliberRM projects. See "Enabling Other Integrations" on page 422 for information about how to enable the Select Enterprise integration.

Note: For information about setting up these integrations, please visit the CaliberRM Customer Zone at http://www.starbase.com/support/logintosupportonline.asp, or contact support.

- **Save Settings:** Saves system settings, including current view and item selected, window size and window position.

- **Exit:** Closes the Framework Administrator.

- **Exit and Log Off:** Closes the Framework Administrator and logs you off of the Caliber system. Also closes CaliberRM if it is open.

Edit Menu

The Edit menu contains several standard Windows commands.
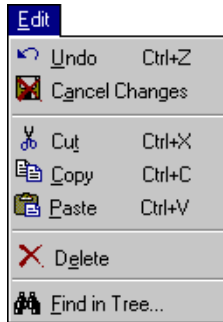
The commands perform the following functions:

- **Undo:** Reverses the previous action performed.
- **Cancel Changes:** Cancels any unsaved changes you have made and returns data to its original form.
- **Cut:** Cuts the selected text.
- **Copy:** Copies the selected text.
- **Paste:** Pastes cut or copied text into the space selected.
- **Delete:** Deletes the selected project, user or group.
- **Find in Tree:** Enables you to find projects, users and groups whose names meet specified criteria.

Find in Tree

To search for a project, user or group:

1. Choose either the Project View, User View or Group View, depending upon what you would like to find.

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2. Select **Edit > Find** from the menu, or click the **Find** button.

   The **Find in Tree** dialog box is displayed.
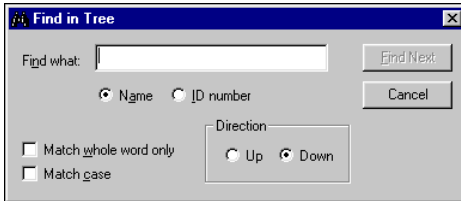
3. Type the name of the item you would like to find, or any portion of the name in the **Find what** field.

4. If you want the search engine to find items with names that match exactly, select the **Match whole word only** check box.

5. If you want the search engine to match names by case, select the **Match case** check box.

6. Select the direction in which to search (**Up** from the currently selected item, or **Down**).

7. Click the **Find Next** button until the item you are searching for is selected.

8. Click the **Cancel button** to close the **Find in Tree** dialog box.

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View Menu

The View menu contains commands to specify the view you want to see.
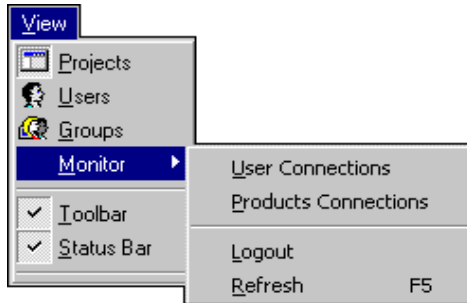
The commands perform the following functions:

- **Projects:** Changes the view to display the list of projects on the left, with project information on tabs on the right.

- **Users:** Changes the view to display the list of users on the left, with user information on tabs on the right.

- **Groups:** Changes the view to display the list of groups on the left, with group information on tabs on the right.

- **Monitor:** Displays the view selections for the User Connections Monitor.

  - **User Connections:** Displays the User Connections Monitor view.

  - **Products Connections:** Displays the Products Connections Monitor view.

  - **Logout:** Allows an administrator to log a client off the system.

  - **Refresh:** Updates project information.

- **Toolbar:** Shows/hides the toolbar. A check mark indicates that the toolbar is displayed.

- **Status Bar:** Shows/hides the status bar. A check mark indicates that the status bar is displayed.

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Tools Menu

The Tools menu contains various commands on four tabs. By selecting **Tools >
Options**, you may select any of the four tabs.
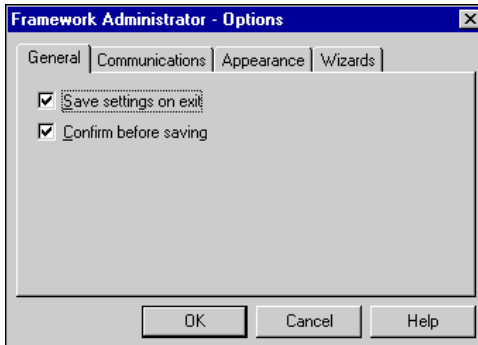
General Tab:

> **Save Settings on Exit:** Saves system settings, including last view and item
> selected, window size and window position, when exiting the Framework
> Administrator.

> **Confirm Before Saving:** Displays a confirmation dialog box that asks if you
> want to save the project, user or group you have modified. This option is
> selected by default.

Communications Tab:

> **Normal Transaction Time Out:** Determines how long, in seconds, the client
> will wait for a response from the server for normal transactions, such as
> displaying project data. If you are running the Framework Administrator
> remotely, you may need to increase this time by a few seconds.

> **Lengthy Operation Time Out:** Determines how long, in seconds, the client
> will wait for a response from the server for lengthy operations, such as
> running reports. The time needed to build reports will depend upon the report
> selected and the amount of data to be compiled.

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Network Diagnostics Level: Determines the level of detail presented when you run the network diagnostics utility. This utility can be used to troubleshoot communication problems. This option should only be changed at the direction of Borland's product support group.

Appearance Tab:

Flat Toolbars: Displays the toolbar buttons as flat, instead of raised.

Icons on Menus: Shows icons next to commands on the menus that have corresponding toolbar buttons. This helps you recognize toolbar buttons.

Resize Windows While Moving Splitter Bar: Redraws the tabs on the right side of the screen dynamically when you move the screen splitter. This may cause some minor flickering on your screen while redrawing, depending on your computer's configuration.

Date Format: Determines how dates are displayed. Format is determined according to Windows settings that are specified when you select **Settings > Control Panel > Regional Settings > Date** from the Windows **Start** menu.

Wizards Tab:

Use Wizards when creating new:

Projects: Determines if projects are created using the Project Creation Wizard or Expert Mode.

Users: Determines if users are created using the User Creation Wizard or Expert Mode.

Groups: Determines if groups are created using the Group Creation Wizard or Expert Mode.

Select the check box next to items you want to create using a Wizard.

To change the Framework Administrator options:

1. Select **Tools > Options** from the menu.

2. Set the options as desired on each tab.

3. Click **OK** to save your changes.

4. Click **Cancel** to exit without saving changes.

Report Menu

The Framework Administrator provides three standard reports: Project, User and Group. The Report menu allows you to preview and print standard reports of project, user and group data.

The commands perform the following functions:

- **Project:** Displays the option to export, preview or print the Project report, which lists all projects with their data, including description and baselines. To export the report, click the **Export** button. See "Exporting Reports" on page 27 for detailed information about the Export feature.

- **User:** Displays the option to preview or print the User report, which lists all users with their data, including description, name, address, department, email address and group assignments.

- **Group:** Displays the option to preview or print the Group report, which lists all groups with their data, including email address, description and users assigned.

To preview the report, click the **Preview** button. See "Report Preview" on page 28 for detailed information about the Preview feature.

To print the report, click the **Print** button and follow the normal Windows printing procedure.

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EXPORTING REPORTS

This feature is only available for project reports. If you would like to export user or group information, use the **Export to Access** feature detailed in "Chapter 24: Export to Access" on page page 383.

To export reports:

1. In the report **Report Setup** dialog box, click the **Export** button. The **Save As** dialog box is displayed.

2. Choose a location in which to save your file.
3. Enter a **File name** and **type**.
4. Click **Save**.

When the export is complete, CaliberRM prompts you to open the file.

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REPORT PREVIEW

The Report Preview contains several options for viewing your report preview, and allows you to print the data.

The toolbar features (listed in order from left to right) perform the following functions:

First Page: Displays the first page of the report.

Previous Page: Displays the previous page.

Current Page number: Displays what page is currently being viewed.

Next Page: Displays the next page.

Last Page: Displays the last page of the report.

Cancel: Cancels the loading process of the records.

Print: Displays the Print dialog box, which allows you to choose the printer, pages to print and number of copies to print.

Printer Setup: Displays options for setting up your printer.

Magnification: Zooms in or out.

Total: Displays the total number of records in the report.

Percent Read: Displays the percentage of records displayed in the preview.

Records Read: Displays the number of records displayed in the preview.

Help Menu

The Help menu displays options for accessing the Help system.
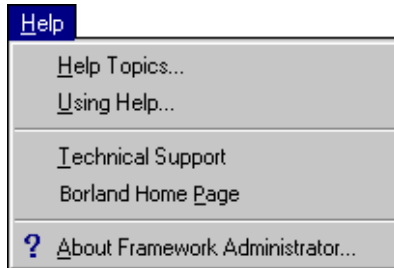
The commands perform the following functions:

Help Topics: Displays the Help system.

Using Help: Displays instructions for using the Help system.

Technical Support: Displays information about contacting Borland's technical support team.

Borland Home Page: Opens an Internet browser and displays the Borland home page.

About Framework Administrator: Displays information about the SQM Framework.

Chapter 3: Getting Started in Framework Administrator

This chapter details the tasks an administrator must perform before users can begin entering and managing requirements in CaliberRM. Other miscellaneous administrator tasks are also described here.

PASSWORD ADMINISTRATION

To comply with corporate and government security regulations, CaliberRM enables administrators to create and enforce user password policies. Password administration is comprised of two sets of restrictions: enterprise level and user level. Enterprise level settings set the policy for **all** user accounts. The exception is Password Expiration. If you go to an individual user's password tab and set the password to never expire, that option supersedes the Enterprise Password Administration setting.

Password policies are implemented by selecting a set of password restrictions from the following options:

- Set maximum password age by specifying the number of days a password is valid before it is required to be changed.

- Set minimum password age by allowing password changes immediately or imposing a waiting period of a certain number of days from the date of the last change.

- Ensure password uniqueness by keeping a history of used passwords. The password history is used in conjunction with the minimum password age option, and protects against multiple, repeated password changes.

- Set password minimum length.

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Enterprise Password Administration

To set the enterprise password options:

1. Select **File > Admin > Account Restrictions** from the menu. The **Account Restrictions** dialog box is displayed.
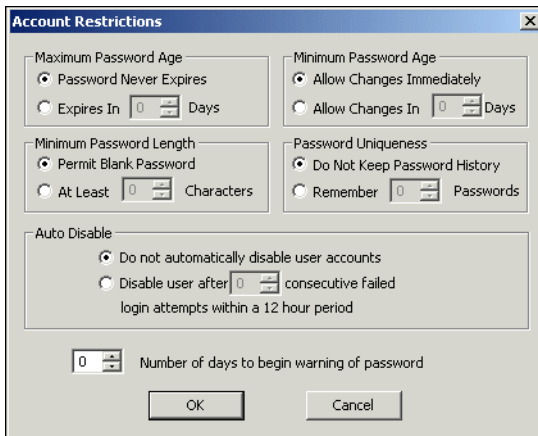
2. In the **Maximum Password Age** box, select **Password Never Expires** if passwords should remain valid indefinitely, or select **Expires In** and enter a number between 1 and 999 to expire passwords in a certain number of days.

3. In the **Minimum Password Age** box, select **Allow Changes Immediately** to allow users to change their password immediately, or select **Allow Changes In** and enter a number between 1 and 999 to allow password changes in a certain number of days from the date of the last password change.

    Note: *This setting is to protect against multiple password changes when Password History is set.*

4. In the **Minimum Password Length** box, select **Permit Blank Password** to permit a blank password, or select **At Least** and enter a number between 1 and 14 to set the minimum number of characters allowed.

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5. In the **Password Uniqueness** box, select **Do Not Keep Password History**, or select **Remember** to keep a password history of 1 to 24 passwords. Passwords that are retained in the history cannot be reused.

6. In the **Auto Disable** box, select the **Do not automatically disable user accounts option button** if you want users to be able to attempt to login an indefinite number of times or the **Disable users after *n* consecutive login attempts within a 12 hour period** option button if you want to limit the number of times a user can attempt to login. See page 78 for information on how to re-enable a user once the account has been disabled.

7. If **Expires In** is selected in Step 2, indicate the number of days between 0 and 45 to begin warning the user in advance of password expiration.

8. Click **OK**.

Note: Enterprise Password Administration affects all users.The exception is Password Expiration. If you go to an individual user's password tab and set the password to never expire, that option supersedes the Enterprise Password Administration setting.

User Account Password Administration

The user account password restrictions enable administrators to:

*   force users to change their password the next time they log on to a server.

*   prevent users from changing their password.

*   allow users to have passwords that never expire.

*   disable user accounts.

You can set password restrictions for a user account when creating a user, or you can change an existing user account. For information about setting password restrictions when creating or modifying a user, see "Setting the User Password" on page 78.

SETTING UP AUTOMATIC NOTIFICATION

Before automatic notification can be enabled, you have to set up the email system for the Framework Administrator to use.

Note: Simple Mail Transfer Protocol (SMTP) is the only mail system that Borland supports.

To set Notification parameters:

1. Select **File > Admin > Notifications** from the menu.

2. Select the **Enable** check box. The **Host**, **Port** and **Sender Address** fields become active.
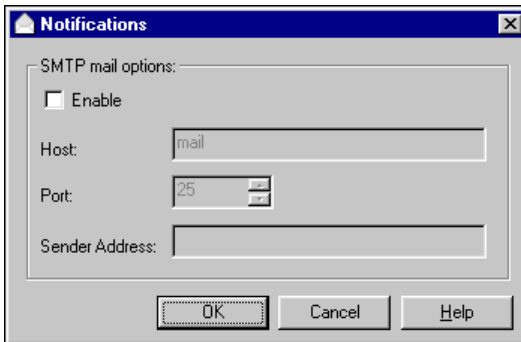
3. In the **Port** field, enter the port used for the SMTP service. The default port setting is 25.

4. In the **Sender Address** field, enter an email address. Notification emails contain the email address of the user making the requirement change. If the user's email is not defined, CaliberRM displays the email address entered in the **Sender Address** field.

5. Click **OK** to save your parameters.

For information about enabling automatic notification, see "Enabling Automatic Notification" on page 59.

DEPARTMENTS

When you create a user, you can specify the department to which the user is assigned. You may add, modify or delete departments as needed, either from within the **User View**, on the **User Info** tab or from the **File** menu at any time.

Note: Departments are used for information purposes only, and are not the same as user groups, although they may have the same name. Use of this feature is optional.

Creating a Department

To create a department:

1. Select **File > Admin > Departments** from the menu. The **Departments** dialog box is displayed.
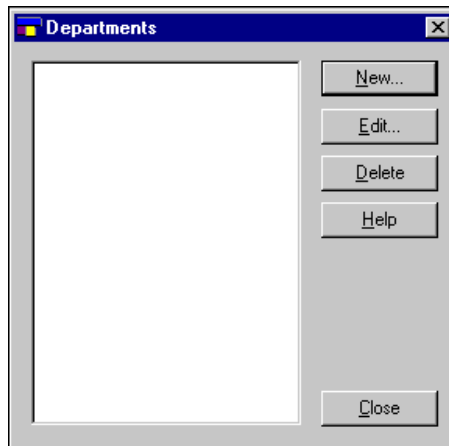
2. Click the **New** button.

    The **Create New Department** dialog box is displayed as shown on the following page.

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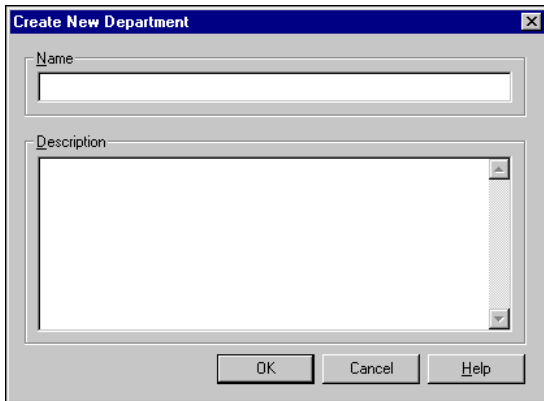
3.   Enter a name and description for the department. Click **OK**.

4.   When you have finished, click **Close** to exit the **Departments** dialog box.

Modifying a Department

To modify a department:

1.   Select **File > Admin > Departments** from the menu. The **Departments** dialog
     box is displayed.

2.   Select the department you want to modify and click the **Edit** button.

     The department's dialog box is displayed.

3.   Make the changes and click **OK**.

4.   Click **Close** to exit the **Departments** dialog box.

Deleting a Department

To delete a department:

1. Select **File > Admin > Departments** from the menu. The **Departments** dialog box is displayed.

2. Select the department you want to delete and click the **Delete** button.

   A message is displayed, verifying that you want to delete the department.

3. Click **Yes** to delete it, or **No** to save it.

4. Click **Close** to exit the **Departments** dialog box.

SECURITY PROFILES

The SQM Framework uses a default security profile that is sufficient for your initial security setup. For instructions on modifying the default security profile and customizing security profiles, see "Security" on page 89.

LICENSE MANAGEMENT

CaliberRM requires you to manage user license information for each product. This enables you to fully maximize product potential.

There are three license specifications for CaliberRM users:

- **Named User License:** This license is assigned to a particular user.

  *Note: If a named user attempts to connect from more than one machine, the connection from the second machine is treated as a concurrent license if one is available. If none are available, the user receives a **No License Available** caution window and must try again later.*

- **Concurrent User License:** This license is assigned and available to a group of users. For example, if your license dictates that you have 10 concurrent users, you can assign as many users as concurrent users as necessary, but only 10 can be logged in at a given time.

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- **Not Authorized User License:** This license is assigned to a particular user. An unauthorized user is always unable to login.

Important Notes:

- *The Admin user is always a named user for each product, but does not count against the number of named user licenses you have. However, if the Admin user attempts to connect from more than one machine, the connection from the second machine is treated as a concurrent license if one is available.*

- *The Framework Administrator and Diagnostic Tool do not count against your number of licenses used.*

- *The number of licenses purchased does not affect how many users you can create in the Framework Administrator.*

Information is located on the **License Management** dialog box. Select **File > Admin > License Management** to access it.

Login Examples	
The Admin user logs in from Client Machine A, then logs in from Client Machine B.	Machine A logs the Admin user in as a Named User, without using an allocated Named User license. Machine B logs the Admin user in as a Concurrent User if a concurrent license is available for the application. If not, the Admin user receives a **No License Available** caution window and must try again later.
A Named user logs in from Client Machine A, then logs in from Client Machine B.	The connection from Machine B is treated as a concurrent license if one is available for the application. If none are available, the user receives a **No License Available** caution window and must try again later.
A Named or Concurrent user logs in the Framework Administrator or the Diagnostic Tool.	No license key is used.
A Concurrent user logs in twice from the same machine.	No license key is used.

Login Examples	
A Concurrent user logs in to two separate machines.	Another license is used.
A Named or Concurrent user logs in to CaliberRM Datamart.	No license key is used.

Making License Changes

To make changes to your licenses by project:

1. Select **File > Admin** from the menu. The **License Management** dialog box is displayed.
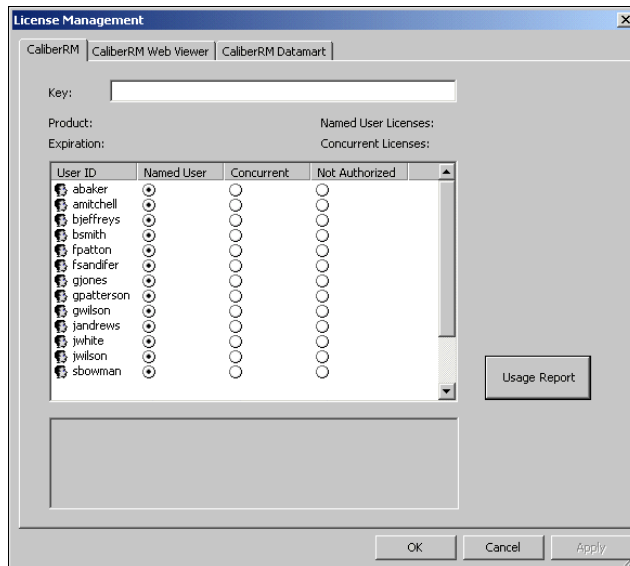
For each product you have a license for, there is a corresponding tab that displays the license key, the license expiration date, the number of **Named**

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User and/or **Concurrent User** licenses you have, and a userid and license designation for each Caliber user. The exception is the Datamart tab, which simply displays the key, the product and expiration date. See the table below for clarification.

Product	License Key	Evaluations
CaliberRM	License Key is required after evaluation period.	To evaluate the product, leave the key field blank or enter a valid evaluation License Key.
CaliberRM Web Viewer	License Key is required after evaluation period.	To evaluate the product, leave the key field blank or enter a valid evaluation License Key.
CaliberRM Explorer/ Datamart	License Key is required to install.	To evaluate the product, enter a valid evaluation License Key during the install.

Important Notes:

- *For a 30 day evaluation copy (blank license key) of CaliberRM, the number of named and concurrent licenses is 500. This applies to new installations and upgrades.*

- *Once a license key is entered the key cannot be removed, only replaced.*

- *Do not change the date on the CaliberRM Server until you have a permanent key.*

- *Once a valid CaliberRM Datamart license key is entered any user can run the Datamart programs.*

Important Note for Customers Who Purchase Named User Licenses:
*Before you enter a new license key, for either an upgrade or new purchase, please ensure you have assigned CaliberRM users their **Named User** licenses and not exceeded the total number of Named User licenses provided by your new key.*

Example: *You have 100 CaliberRM users, and made 50 of them Named Users during your evaluation period. You then purchase 10 Named User licenses. Before entering the new license key, reduce your 50 Named Users to the 10 Named User desired. Otherwise, your new license key will automatically assign the 10 Named User licenses to the first 10 CaliberRM users from the 50 Named Users you selected during your evaluation period.*

2. You can change any user's license key type by selecting the user from the list, and choosing the appropriate option button.

    Note: *Use the **SHIFT** key to select a range of users, or the **CTRL** key to select additional users.*

Usage Reports

You can create usage reports that provide details about how often your CaliberRM users log in, how long they stay logged in and more.

To generate a usage report:

1. Select **File > Admin** from the menu. The **License Management** dialog box is displayed as shown on page 39.

2. Select the product you want a report of by clicking that product tab.

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3.   Click the **Usage Report** button. The **Usage Report** dialog box is displayed.
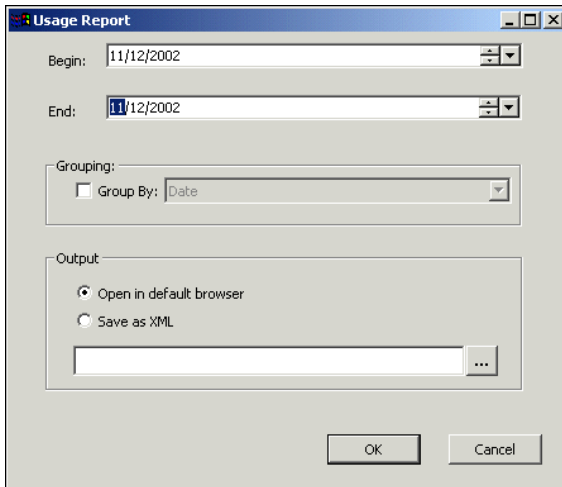
4.   Select the date range you want the report to display.

5.   If you want the data grouped, select the **Grouped By** check box, and select a method from the drop-down list.

6.   Select the output:

   •   **Open in default browser –** Select this option to view the report immediately. Go to Step 7 on page 43.

   •   **Save as XML –** Select this option to save the file as an .xml file to view later. Go to Step 8 on page 45.

7. Click **OK**. Your default browser opens and displays the usage report, as shown below.

The report displays a table with ten columns:

*   **User ID:** The user's userid.

*   **Client IP Address:** The user's IP address.

*   **Login Date:** The date the user logged in.

*   **Login Time:** The time the user logged in.

*   **Login Status:** The login status of the user.

    -   **Invalid Login or Password:** The user could not login because his/her userid or password is invalid.

    -   **User Not Authorized:** The user could not login to the product because he/she is not a licensed user.

- **Password Expired:** The user could not login because his/her password has expired.

- **License Obtained:** The user was granted a license, and logged in successfully.

- **No License Available:** The user could not login because there was not an available license.

- **License Type:** The license type assigned to the user.

- **N/A:** Not Applicable, meaning the product does not support named or concurrent licenses, such as Framework Administrator.

- **Named:** The user is assigned a named user license.

- **Concurrent:** The user is assigned a concurrent license.

*Note: The License Type is usually displayed as N/A. The exception is with a Login Status of either **License Obtained** or **No License Available**, which is displayed as **Named** or **Concurrent**.*

- **Application:** The CaliberRM client application the user accessed. See the table on the following page for details about each product component.

- **Log Out Date:** The date the user logged out.

- **Log Out Time:** The time the user logged out.

- **Duration:** The amount of time, in hours, minutes and seconds the user spent logged in.

Product Name	Application
CaliberRM	• CaliberRM Win32 client • CaliberRM Web (Java – with add/modify capabilities) • CaliberRM Document Factory • CaliberRM Import • CaliberRM Export • CaliberRM Viewer • CaliberRM SDK (COM/Java API)
CaliberRM Web Viewer	• CaliberRM Web Viewer – Web Viewer (Java - read only capability)
CaliberRM Datamart	• CaliberRM PRO Datamart – PROConfigurator • CaliberRM PRO Datamart – PROExtractor • CaliberRM PRO Datamart – PROSynchronizer ***Note:*** *CaliberRM Explorer is not under License Management.*
CaliberRM Framework Administrator	• CaliberRM Framework Administrator • CaliberRM Diagnostic Tool

8. If you selected to save the report as an .xml in Step 6, click the **Browse** button [...] to navigate to the location where you want to save the file.

9. Enter a name for the file and click **Open**. The file is saved.

10. Click **OK** to exit the **License Management** dialog box.

Moving the Usage Report Data to Microsoft Excel

Once you view your usage report, you may want to analyze it in Microsoft Excel.

To analyze your data in Excel:

1. Complete Steps 1-7, beginning on page 41.

2. Select **Edit > Select All** from the menu.

3. Select **Edit > Copy** from the menu.

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4.   Open Excel and create a blank spreadsheet.

5.   In Excel, select **Edit > Paste**. The data is filled in.

6.   Adjust your spreadsheet as necessary.

USER CONNECTIONS MONITOR

The User Connections Monitor provides information to CaliberRM administrators about the identity, license information and the number of connected users to the CaliberRM server, and for each product. The Monitor also provides a logout method for administrators to log clients off the system.

User Connections View

To view information about individual users, click the **Monitor** button or select **View > Monitor > User Connections** from the menu. The user list is displayed.

The User Connections view indicates the total number of users connected to the Caliber Server. Expanding the **Active Users** node shows a detailed list of connected users including their IP Address, Product, License Information, personal information, and more.

Press F5 to refresh the information.

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Product Connections View

To view information about connected users by Product, select **View > Monitor > Product Connections** from the menu. The product list is displayed.

The Product Connections view indicates the total number of users connected to each Caliber product. Expanding the **Product Name** node shows a detailed list of connected users including their IP Address, Product, License Information, personal information, and more.

Press F5 to refresh the information.

CLIENT LOGOUT

If a CaliberRM client crashes, gets locked or disconnected from the network, an administrator can log it off of the system. This allows the administrator to free resources immediately instead of waiting for the server to timeout the connection. All resources used by that client are available for use by other clients. This includes releasing the license, unlocking locks and freeing memory.

To logout a client:

1. Select the **Monitor** view in Framework Administrator.

2. Select the user connection you want to disconnect.

3. Select **View > Monitor > Logout** from the menu. The client is disconnected.

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Chapter 4: Projects

OVERVIEW

A project is defined as work that you need to manage as a whole, such as an application or system under development. Projects consist of several types of information, including users and groups, requirement types and requirements. Project administration is performed in the Framework Administrator and includes:

- creating, modifying and deleting projects,
- assigning users and groups,
- assigning security profiles,
- setting automatic notification,
- creating, modifying and deleting project glossaries,
- enabling project integrations.

The Project View contains a set of four tabs that facilitate administrator activities:

- Project Info
- Group Assignment
- Glossaries
- Project Baselines
- External Traceability

The Framework Administrator Project View is shown on the following page.

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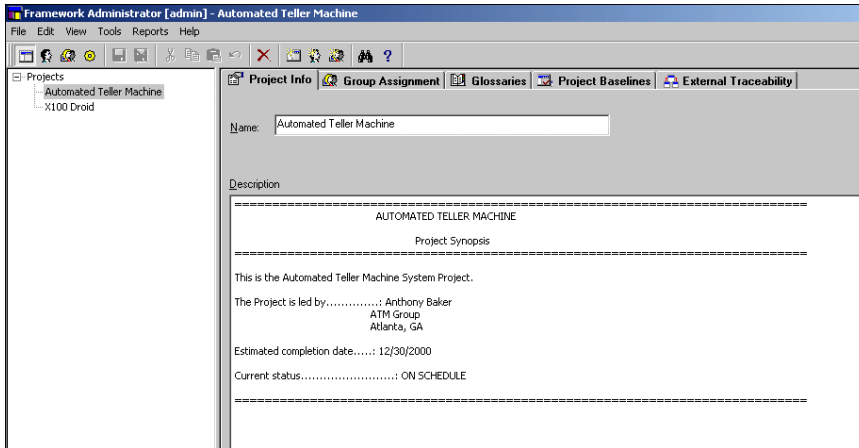
CREATING A PROJECT

There are two ways to create a project: using the Project Creation Wizard, or using Expert Mode. Expert Mode uses the dialog boxes for creating projects and is designed for users who are already familiar with defining project information.

Project Creation Wizard

The wizard launches automatically when you click the **New Project** button if you have selected that option in Framework Administrator Options. Select **Tools > Options > Wizards** from the menu to verify that the wizard is selected.

To create a project using the Project Creation Wizard:

1. Click the **New Project** button.

Step 1 of the Project Creation Wizard is displayed.
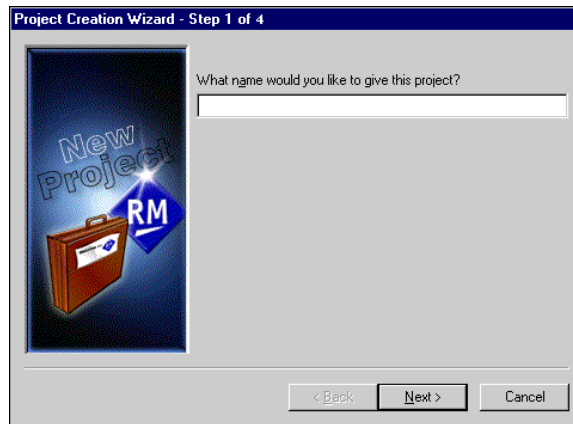
2. Enter a name for the project.

3. Click **Next**. Step 2 of the Project Creation Wizard is displayed.

4. Enter a description for the project.

5.   Click **Next**. Step 3 of the Project Creation Wizard is displayed.
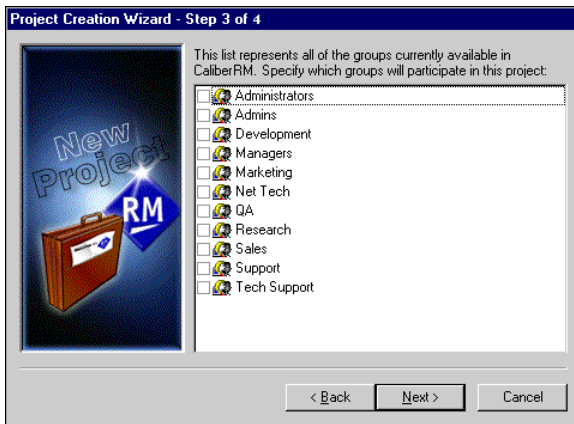
6.   Assign groups to the project by selecting the appropriate boxes to the left of the group names.

7.   Click **Next**. Step 4 of the Project Creation Wizard is displayed.

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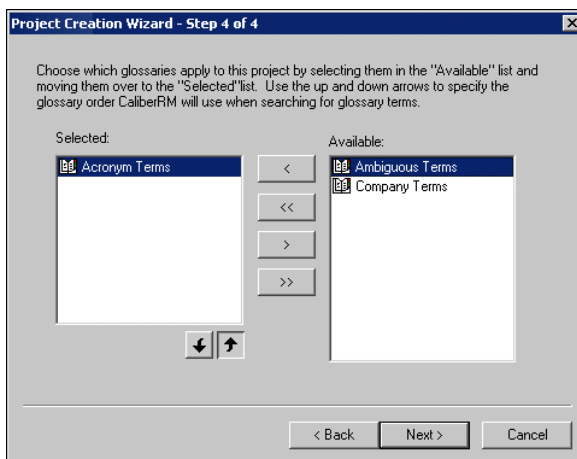
8. Select the glossary you want to associate with the project from the **Available** list.

    *Note: Use the **SHIFT** key to select a range of glossaries, or the **CTRL** key to select multiple glossaries individually.*

9. Click the **Move Left** button to move the glossary to the **Selected** list.

    *Note: You can assign all the glossaries in the **Available** list to the **Selected** list by clicking the **Move All Left** button.*

10. You may arrange the order of the glossaries by using the **Move Up** and **Move Down** buttons. The order of the list determines the order in which CaliberRM searches the glossaries, and the color order that is displayed when there are identical terms in multiple glossaries.

11. Click **Next**. The **New Project Information** dialog box is displayed.
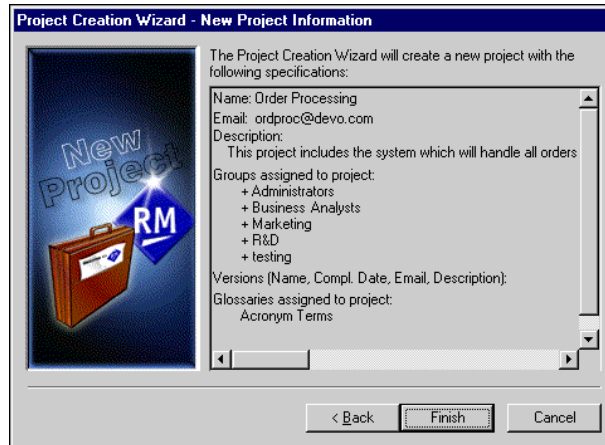
12. Verify the information you have entered. If the information is correct, click **Finish**. If not, click **Back** and make the necessary changes.

    The project is created.

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You can now modify the user list, assign a security profile and set automatic notification for each group assigned to the project. See "Advanced Steps" on page 56.

Creating a Project Using Expert Mode

To create a project using Expert Mode, you must first define the basic project information and assign groups.

Note: *To create a project using Expert Mode, the option to use wizards must be cleared in **Tools > Options > Wizards.***

Defining Project Information

To define the project information:

1. Select **File > New Project** from the menu, or click the **New Project** button.

   A new project is created and the **Project Info** tab is displayed.
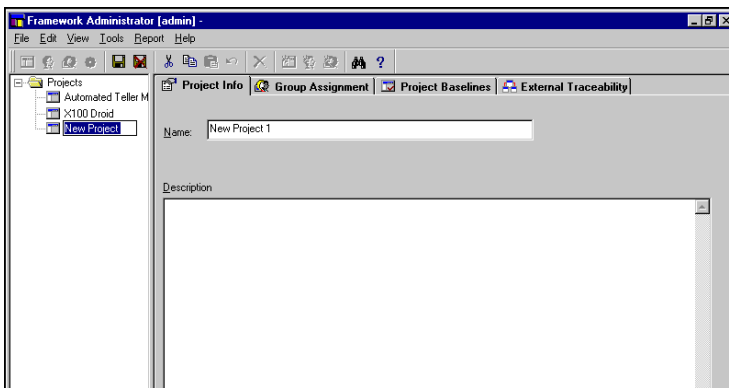
2. Enter a name and description for the project.

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3. To save the project, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete the project, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

Assigning Groups

Once you have created your project, you can assign groups to the project. Users in these groups are then able to view and modify the project information as specified by their security profiles.

To assign groups to a project:

1. Select the **Group Assignment** tab. The tab is displayed.
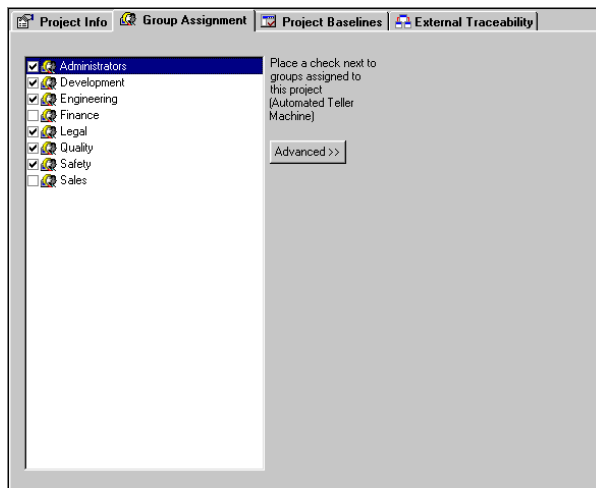
2. Select the box to the left of any group you want to assign. A check mark in the box indicates that the group is assigned.

    When you assign a group to a project, all of the users who are members of that group are automatically assigned to the project. You can then modify the user list if necessary to assign only specific members to the project. For more information, see "Modifying the User List" on page 57.

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3. To save the project, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete the project, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

ADVANCED STEPS

There are three advanced steps to assigning users and groups that can be performed once groups have been assigned to a project: modify the user list, assign a security profile and set automatic notification for assigned groups within the project. These functions are accessed when you select a group from the **Group Assignment** tab and click the **Advanced** button.

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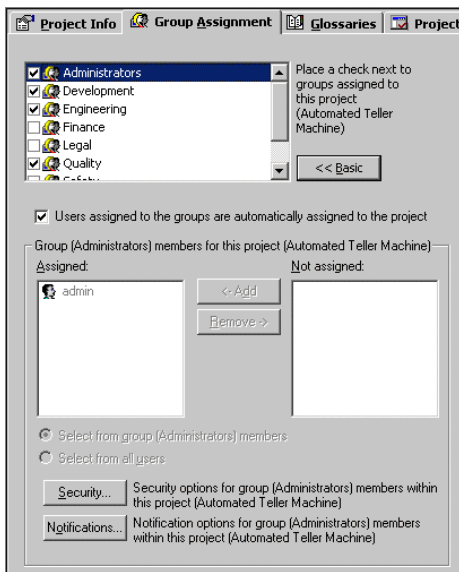
Modifying the User List

To modify the user list for the selected group within a project:

1. Select the group with the user list you want to modify.

2. Click the **Advanced** button. The Advanced functions are displayed.

    The **Assigned** list contains a list of users assigned to that group within the project, and the **Not Assigned** list contains a list of users not assigned to the project. All members of the selected group are assigned by default.

3. To automatically add users to the project, select the **Users assigned to the groups are automatically assigned to the project** check box. This option is a per project selection. If you select this option, all users assigned to the group are assigned to the project and the **Assigned** and **Not Assigned** selections are unavailable. If you select this option, go to step 6.

WARNING! ANY USER THAT IS ASSIGNED TO A PROJECT THAT IS NOT ASSIGNED TO A GROUP WILL NO LONGER BE ASSIGNED TO THAT PROJECT IF THIS OPTION IS SELECTED.

4. To remove users from the **Assigned** list box, select them and click the **Remove** button.

    To add users to the **Assigned** list box, select them from the **Not Assigned** list box and click the **Add** button.

    *Note: Use the **SHIFT** key to select a range of groups, or the **CTRL** key to select additional groups.*

5. To display **all** CaliberRM users in the **Not Assigned** list box, select the **Select From All Users** option button.

    This allows you to assign users to the group for the selected project only, without changing global group assignments. For example, the tester *ajones* may assist in development for a specific project, but does not need to be added to the Developers group to participate as a developer for that project only.

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*Note: If you create new users and assign them to a group that was previously assigned to a project, you must modify the user list to move them into the **Assigned** list box.*

6. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

Setting Security in a Project

You can set access privileges for each group in a project by assigning a security profile to each group. For more information on creating security profiles, see "Creating a Security Profile" on page 90.

To assign a security profile to a group within a project:

1. On the **Group Assignment** tab, select an assigned group from the group list box.

2. Click the **Advanced** button. The Advanced functions are displayed.

3. Click the **Security** button. The **Security** dialog box is displayed.

4. Select the security profiles you want to assign to the group. Profiles apply to **all** users within the selected group, for the **selected project only**. If multiple profiles are selected, the profiles are combined, and the least restrictive access level of all selected profiles is used. If no profile is selected, the default profile is used to determine access. See "Combining Security Profiles" on page 97

5. Click **OK** to return to the **Group Assignment** tab.

6. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

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Enabling Automatic Notification

Each requirement may have several individuals assigned to it as responsible users. For example, the business analyst who created the requirement may be assigned responsibility, as well as a developer, tester and manager.

When a requirement is added, modified or deleted, the responsible users must be notified. Framework Administrator notifies all responsible individuals by email, according to the notification configuration. However, not all assigned individuals need to be notified of every change. Therefore, you can customize notification by group within each project. Groups may receive notification if a requirement is added, modified or deleted.

To use the notification process, configure the email notification parameters in Framework Administrator (see "Setting Up Automatic Notification" on page 34). If these parameters are not set up correctly, notifications are generated and queued until the email system is properly specified.

To set automatic notification for a group within a project:

1. Select **View > Projects** from the menu, or click the **Project View** button.
2. Select the project with the notifications you want to change.
3. From the **Group Assignment** tab, select an assigned group in the group list.
4. Click the **Advanced** button.

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5. Click the **Notifications** button. The **Notifications** dialog box is displayed.
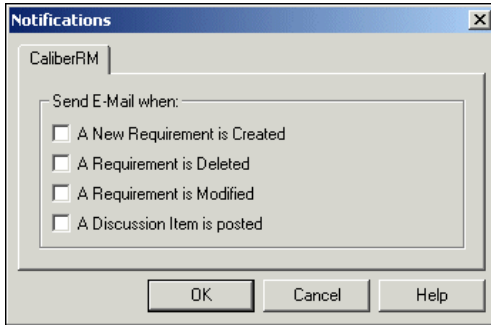
6. Select the **A New Requirement is Created** check box to notify responsible individuals of requirement assignments.

   • Select the **A Requirement is Deleted** check box to notify responsible individuals of a deleted requirement.

   • Select the **A Requirement is Modified** check box to notify responsible individuals of a modified requirement.

   • Select the **A Discussion Item is posted** check box to notify responsible users that a new discussion item has been added. When a new discussion is posted or replied to, an email will be sent to users assigned as responsible to the requirement, users who have registered interest in the requirement and any other users who have participated in the particular discussion thread.

   Note: These options apply to all users within the selected group that are assigned to the project.

7. Click **OK** to return to the **Group Assignment** tab.

8. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

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MODIFYING A PROJECT

To modify an existing project:

1. Select **View > Projects** from the menu, or click the **Project View** button.

2. Select the project you want to modify.

    Note: When a project is being modified, the project list displays a lock icon on the project, indicating that the project cannot be modified by anyone else at the same time.

3. Select the tab containing the information you want to modify.

4. Edit the project information.

5. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

DELETING A PROJECT

WARNING: IF YOU DELETE A PROJECT, YOU CANNOT RECOVER DELETED DATA.

Note: Before you can delete a project, you must first delete all requirements in the project, unassign all requirement types assigned to the project and delete all baselines in the project.

To delete an existing project:

1. Select **View > Projects** from the menu, or click the **Project View** button.

2. Select the project you want to delete.

3. Select **Edit > Delete** from the menu, or click the **Delete** button. A message is displayed verifying that you want to delete the project.

4. Click **Yes** to delete the project, or **No** to save it.

PROJECT GLOSSARIES

CaliberRM can contain multiple glossaries that allow you to define terms that are specific to your organization's projects. These glossaries are created by an administrator in the Framework Administrator and maintained in CaliberRM. CaliberRM Administrators create, define, delete and modify terms. Defined terms are automatically converted to color-coded hyperlinks in the requirement description as they are typed.

Creating a Glossary

To create a new glossary:

1. In Framework Administrator, select **File > Admin > Glossaries**.

    The **Glossaries** dialog box is displayed.

Borland
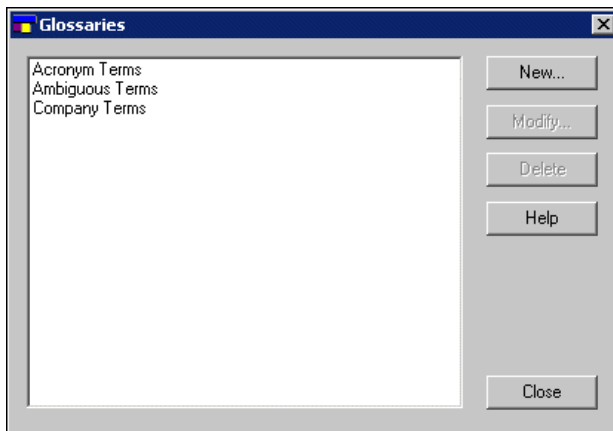
2. Click **New**. The **Glossary** dialog box is displayed.
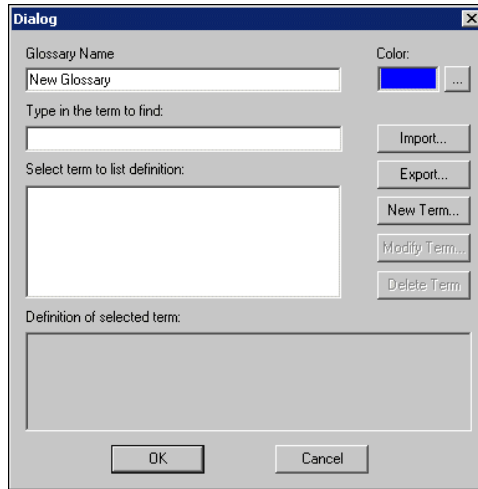
3. Enter a name for the new glossary.

4. Select a color for the glossary terms.

5. If you want to add a term, click the **New Term** button.

6. Click **OK**.

The Glossary is created and added to the **Glossaries** tab. You can also import an existing glossary to create a new glossary. See "Importing Glossaries" on page 65.

Assigning a Glossary to a Project

To assign a glossary to a project:

1. In Framework Administrator, select the project in which you want to assign a glossary.

2. Select the **Glossaries** tab. The tab displays a list of all of the selected (assigned) and available glossaries.

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3. Select the glossary you want to associate with the project from the **Available** list.

    *Note: Use the **SHIFT** key to select a range of glossaries, or the **CTRL** key to select multiple glossaries individually.*

4. Click the **Move Left** button to move the glossary to the **Selected** list.

    *Note: You can assign all the glossaries in the **Available** list to the **Selected** list by clicking the **Move All Left** button.*

5. You may arrange the order of the glossaries by using the **Move Up** and **Move Down** buttons. The order of the list determines the order in which CaliberRM searches the glossaries, and the color order that is displayed when there are identical terms in multiple glossaries.

6. Click the **Save** button to save the project.

The glossary is assigned to the project.

Modifying a Glossary

To modify a glossary:

1. In the Framework Administrator, select **File > Admin > Glossaries**. The **Glossaries** dialog box is displayed.

2. Click **Modify**. The **Glossary** dialog box is displayed.

3. Make desired changes.

4. Click **OK**.

5. Click the **Save** button to save the project.

The Glossary is modified. You can also import existing glossary terms to an existing glossary. See "Importing Glossaries" on the following page.

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Deleting a Glossary

To delete a glossary:

1. In the Framework Administrator, select **File > Admin > Glossaries**. The **Glossaries** dialog box is displayed.

2. Select the glossary you want to delete from the list.

3. Click **Delete**. The **Deleting Glossaries** dialog box is displayed.

4. Click **OK** to delete the glossary or **Cancel** to save the glossary.

5. Click **Close** to close the **Glossaries** dialog box.

Importing Glossaries

You can import a predefined glossary of terms into an existing glossary or a new glossary. The import file must be an .xml file. See page 66 for a sample .xml file.

To import a glossary:

1. Select **File > Admin > Glossaries** from the menu. The **Glossaries** list dialog box is displayed.

2. If you want to import terms into a new glossary, click **New**. If you want to import terms into an existing glossary, select that glossary and click **Modify**. The **Glossary** edit dialog box is displayed.

3. If creating a new glossary, enter a name and color.

4. Click **Import**. The **Import Glossary Terms** dialog box is displayed.

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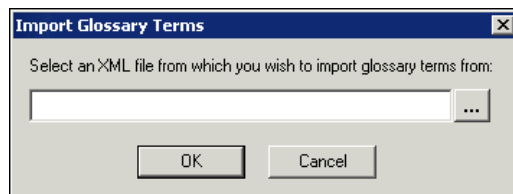
5. Enter in the name of the file you want to import, or click the **Browse** button to navigate to the file.

6. Click **OK**.

The terms now appear in your glossary.

Sample .xml Format

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE Glossary (View Source for full doctype...)>
- <Glossary>
  - <Terms>
    - <Term>
        <Name>ATM</Name>
        <Definition>Automated Teller Machine</Definition>
      </Term>
    - <Term>
        <Name>OPS</Name>
        <Definition>Order Processing System</Definition>
      </Term>
    - <Term>
        <Name>PO</Name>
        <Definition>Purchase Order</Definition>
      </Term>
    </Terms>
</Glossary>
```

Exporting Glossaries

You can export an existing CaliberRM glossary to an .xml file.

To export a glossary:

1. Select **File > Admin > Glossaries** from the menu. The **Glossaries** list dialog box is displayed.

2. Select the glossary that contains the terms you want to export from the list and click **Modify**.

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3. Click **Export**. The **Export Glossary Terms** dialog box is displayed.
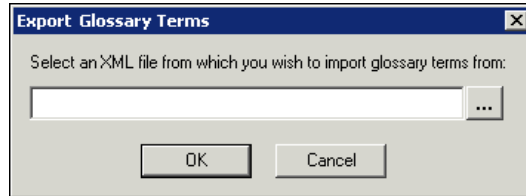
4. Click the **Browse** button and navigate to the location you want to save the file. Enter in a name for your file

5. Click **OK**. Your glossary is now in an .xml file.

Note: You can also print glossary information using Document Factory. See page 341 for more information.

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Chapter 5: Users and Groups

USERS

A **User** is any person who has access to or uses CaliberRM or the Framework Administrator system. Users can be developers, managers, testers, CEOs, and others in your enterprise. A user may also be defined just for the purpose of receiving notifications about requirements. They do not need to actually use CaliberRM.

User information includes contact information for each user, including an email address used for automatic notification. Users are placed in one or more **groups** and assigned to projects and requirements.

Users and groups are defined in Framework Administrator and assigned at the project and requirement levels as needed. The graphic below illustrates the hierarchy of user and group lists from the framework level to the requirement level.
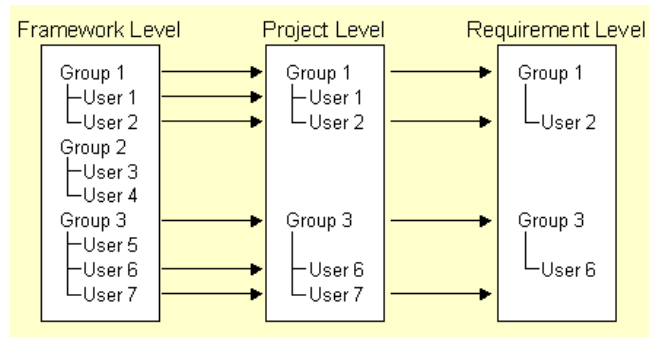
You may add users to a group in either the User View, shown on the following page, or the Group View, shown on page 81. You may also edit user information within the Group View.

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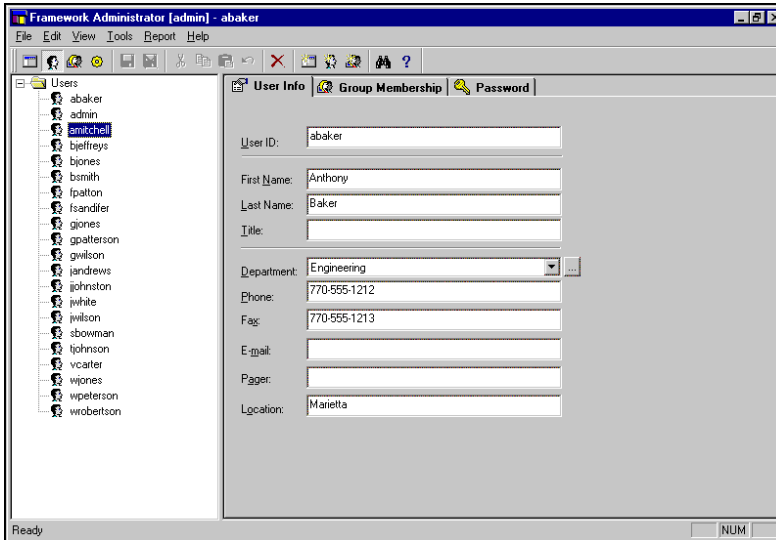
USER ACCESS LEVELS

There are four levels of CaliberRM users:

*   **Framework Administrator:** Has special administrative rights in Framework
    Administrator and in the Requirements Manager. Framework Administrators
    are members of the group **Administrators** and can only be created by other
    Framework Administrators. Depending on their security profile, an
    administrator does not necessarily have access to all user-level functions.

*   **CaliberRM Administrator:** Has special administrative rights in the
    Requirements Manager. They manage tasks that are requirement-specific (does
    not include baseline maintenance. See Baseline Administrator, below).
    CaliberRM Administrators are created in the Requirements Manager by
    Framework Administrators or by other CaliberRM Administrators. Depending

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on his/her security profile, an administrator does not necessarily have access to all user level functions. See "CaliberRM Administrative Tasks" on page 129.

- **Baseline Administrator:** Performs all levels of baseline maintenance. This user does not have to be a Framework Administrator or a CaliberRM Administrator. See page 78 for information on making a user a baseline administrator.

- **User:** Performs user-level functions. Has no administrative rights.

The features and commands available to each user are project and group-specific. They are determined by the type of installation, security profile, requirements type level and by the product integrations that are enabled in the project.

CREATING A USER

There are two ways to create a user: using the User Creation Wizard or using Expert Mode. Expert Mode uses the dialog boxes to create users, and is for those who are familiar with defining user information.
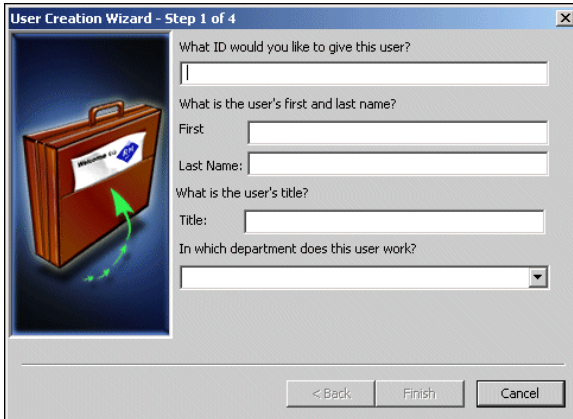
User Creation Wizard

There are four steps to creating a user through the User Creation Wizard. The wizard launches automatically when you click the **New User** button, if you have selected that option in Framework Administrator Options. Select **Tools > Options > Wizards** from the menu to verify that the wizard is selected.

To create a user using the User Creation Wizard:

1. Click the **New User** button. Step 1 of the User Creation Wizard is displayed as shown on the following page.
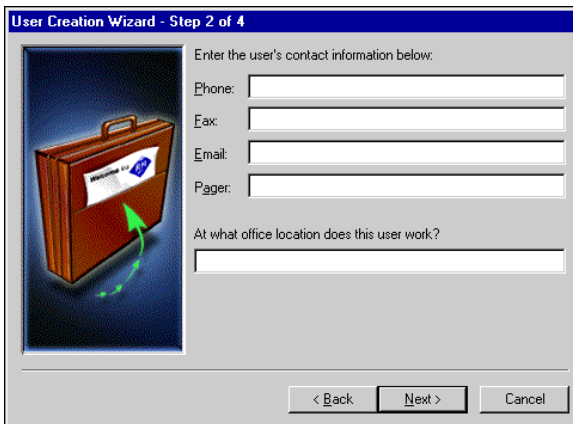
2. Enter a unique ID for the user.

3. Enter the first and last name of the user and specify the user's title and department.

4. Click **Next**. Step 2 of the User Creation Wizard is displayed.

5. Enter the user's phone, fax, email, pager and location information.

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6. Click **Next**. Step 3 of the User Creation Wizard is displayed.

7. To assign the user to groups, select groups in the **Not a member of** list and click the **Add** button.

    *Note: Use the **SHIFT** key to select a range of groups, or the **CTRL** key to select additional groups.*

8. Click **Next**. Step 4 of the User Creation Wizard is displayed as shown on the following page.

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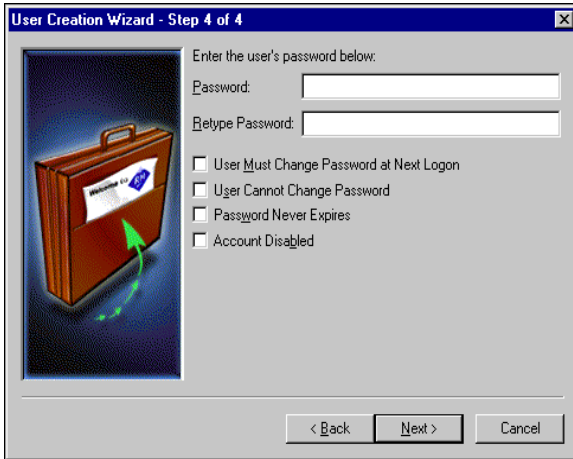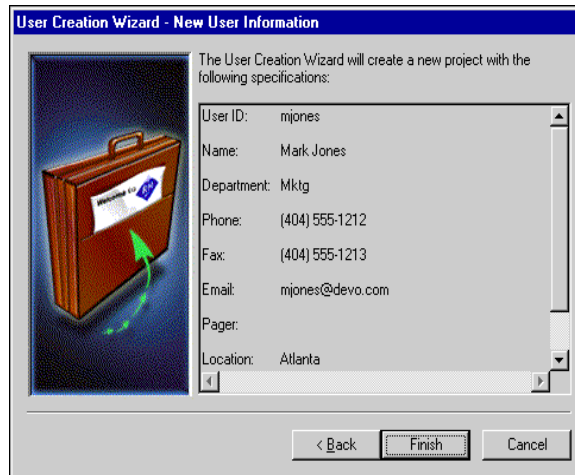
9. Enter the user's password and then retype it for verification.

    Note: If you assign and attempt to save a password that is inconsistent with the Password Policy, you get an error message. For more information, see "Enterprise Password Administration" on page 32.

10. Select one or more of the following options to set the appropriate user password restrictions:

    • **User Must Change Password at Next Logon:** Forces the user to change his/her password at the next logon.

    • **User Cannot Change Password:** Prevents the user from changing his/her password.

    • **Password Never Expires:** Allows the user to have a password that never expires.

    • **Account Disabled:** Disables the user account.

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*Note: The **User Must Change Password at Next Logon** and the **User Cannot Change Password** check boxes may not be selected at the same time. If you select these boxes and attempt to save the information, an error message is displayed.*

11. Click **Next**. The **New User Information** dialog box is displayed.

12. Verify the information you have entered. If the information is correct, click **Finish**. If not, click **Back** and make the necessary changes.

The user is created.

Creating a User Using Expert Mode

There are three steps to creating a user:

1. Defining basic user information.

2. Adding the user to groups.

3. Setting the user password.

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Note: To create a user using Expert Mode, the option to use wizards for creating new users must be cleared in **Tools > Options > Wizards.**

Defining User Information

To define the basic user information:

1. Select **File > New User** from the menu, or click the **New User** button. A new user is created, and the **User Info** tab is displayed.
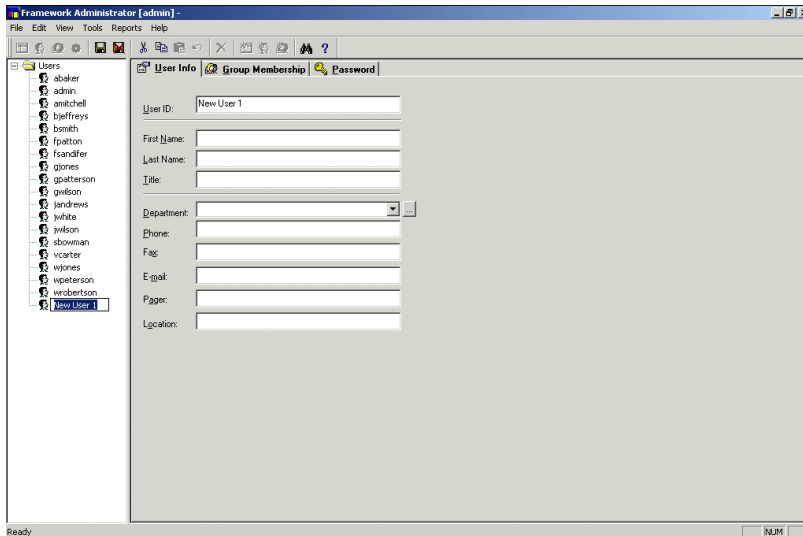
2. Enter the user information in the fields displayed.

    Note: If the Department needed is not available in the drop-down list, you may edit the list by clicking the **Browse** *button. For additional information, see "Departments" on page 35.*

3. To save the user, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete the user, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

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Adding the User to Groups

If groups have already been created, click the **Group Membership** tab. See page 81 for instructions on creating a group.

To add the user to groups:

4. Select the group(s) to make the user a member of, from the **Not member of** list box.

   *Note: Use the **SHIFT** key to select a range of groups, or the **CTRL** key to select multiple groups individually.*

5. Click the **Add** button to move the selected group(s) to the **Member of** list box.

   Note: When modifying a user, a lock icon is displayed on the user list. This prevents someone else from modifying the user at the same time.

6. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

*Note: To remove users from a group, select the group(s) in the **Member of** list box and click the **Remove** button.*

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Setting the User Password

To set the password the user must enter to log on, click the **Password** tab.

To set the user password:

1. Enter a password in the **Password** field.

    Note: For security reasons, all characters of the password are displayed as asterisks (*). If you choose to leave the password information blank, the user will be able to log on without entering a password.

2. Retype the password in the **Retype Password** field.

    If the two passwords do not match, you are prompted to re-enter them.

    Note: If you assign and attempt to save a password that is not consistent with the Password Policy, you will get an error message. For more information, see "Enterprise Password Administration" on page 32.

3. Select one or more of the following options to set the appropriate user password restrictions:

    *   **User Must Change Password at Next Logon:** Forces the user to change his/her password at the next logon.

    *   **User Cannot Change Password:** Prevents the user from changing his/her password.

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- **Password Never Expires:** Allows the user to have a password that never expires.

- **Account Disabled:** Disables the user account.

- **User Can Perform Baseline Administration:** Establishes the user as a baseline administrator.

*Note: The **User Must Change Password at Next Logon** and the **User Cannot Change Password** check boxes may not be selected at the same time. If you select these boxes and attempt to save the information, an error message is displayed.*

4. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button instead.

MODIFYING A USER

To modify an existing user:

1. Select **View > Users** from the menu, or click the **User View** button.

2. Select the user to modify.

3. Select the tab containing the information to modify.

4. Edit the user information.

5. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

DELETING A USER

WARNING: REMOVING A USER REMOVES HIM/HER FROM ALL ATTRIBUTES AND RESPONSIBILITIES FOR REQUIREMENTS. IF YOU DELETE A USER, YOU CANNOT RECOVER DELETED DATA.

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To delete a user:

1. Select **View > Users** from the menu, or click the **User View** button.

2. Select the user to delete.

3. Select **Edit > Delete** from the menu, or click the **Delete** button.

    A message is displayed to verify that you want to delete the user.

4. Click **Yes** to delete the user, or **No** to save it.

GROUPS

Groups are collections of users with similar responsibilities (i.e., Managers, Developers, Engineers, Marketing, etc.). Group information includes contact information for each group and group members.

Borland
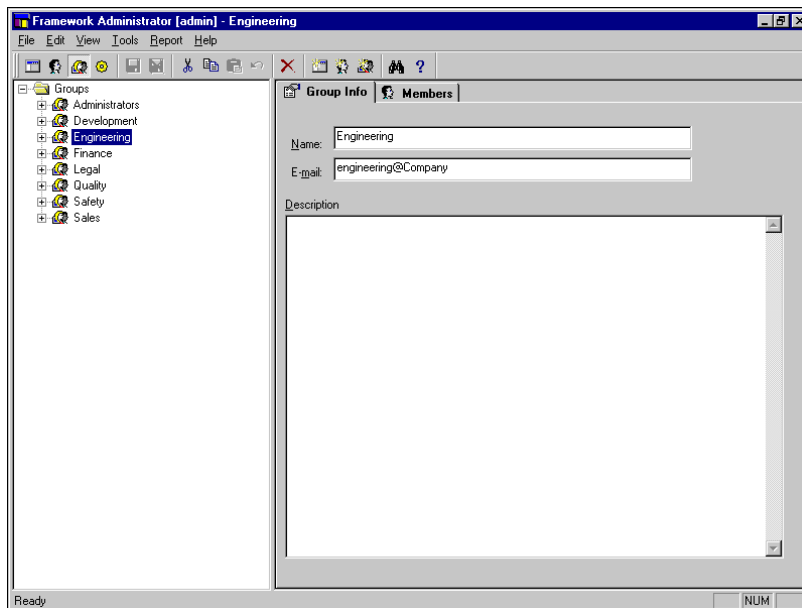
CREATING A GROUP

There are two ways to create a group: using the Group Creation Wizard or using Expert Mode. Expert Mode uses the dialog boxes for creating groups, and is for those who are familiar with defining group information.

Group Creation Wizard

There are four steps to creating a group through the Group Creation Wizard. The wizard launches automatically when you click the **New Group** button, if you have selected that option in the Framework Administrator Options. Select **Tools > Options > Wizards** from the menu to verify that the wizard is selected.

To create a group using the Group Creation Wizard:

1. Click the **New Group** button. Step 1 of the Group Creation Wizard is displayed.
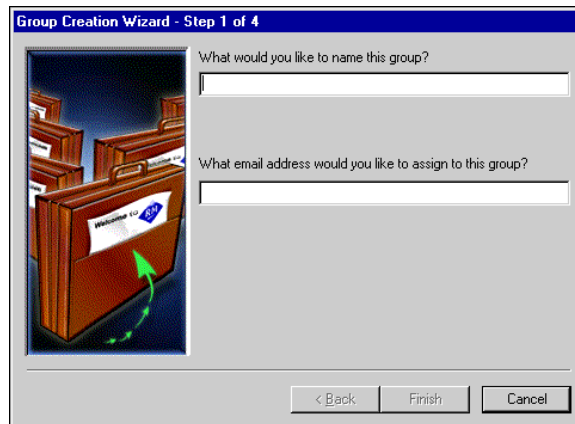
2. Enter a unique name and an email address for the group.

    Note: *This email address is used for information only and has no effect on notifications.*

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3. Click **Next**. Step 2 of the Group Creation Wizard is displayed.
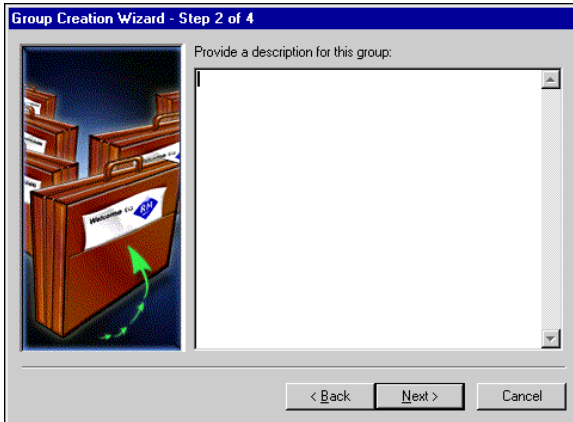
4. Enter a description for the group.

5. Click **Next**. Step 3 of the Group Creation Wizard is displayed.

6. To assign users to the group, select users in the **Not Selected** list and click the **Add** button.

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*Note: Use the **SHIFT** key to select a range of users, or the **CTRL** key to select multiple users individually.*

7. Click **Next**. Step 4 of the Group Creation Wizard is displayed.
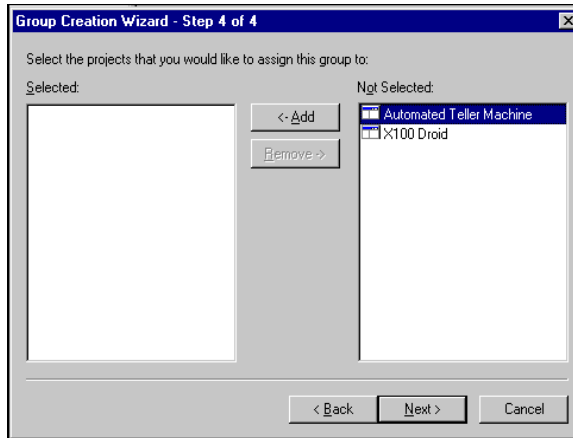
8. To assign the group to projects, select projects in the **Not Selected** list and click the **Add** button.

*Note: Use the **SHIFT** key to select a range of projects, or the **CTRL** key to select multiple projects individually.*

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9. Click **Next**. The **New Group Information** dialog box is displayed.
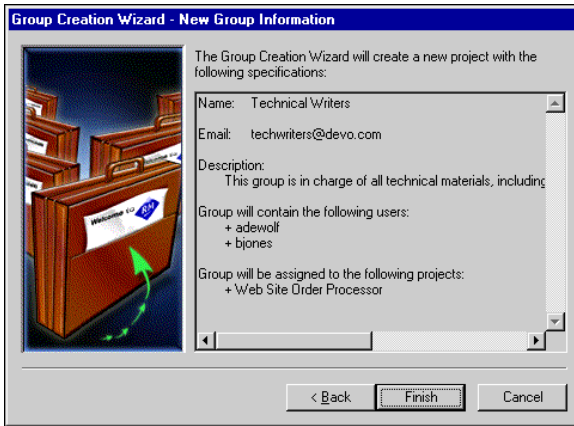
10. Verify the information you have entered. If the information is correct, click **Finish**. If not, click **Back** and make the necessary changes.

The group is created.

Creating a Group Using Expert Mode

There are two steps to creating a group using Expert Mode: defining group information and adding users to the group.

*Note: To create a new group using Expert Mode, the option to use wizards must be cleared in **Tools > Options > Wizards**.*

Defining Group Information

To define the group information:

1. Select **File > New Group** from the menu, or click the **New Group** button.

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A new group is created, and the **Group Info** tab is displayed.
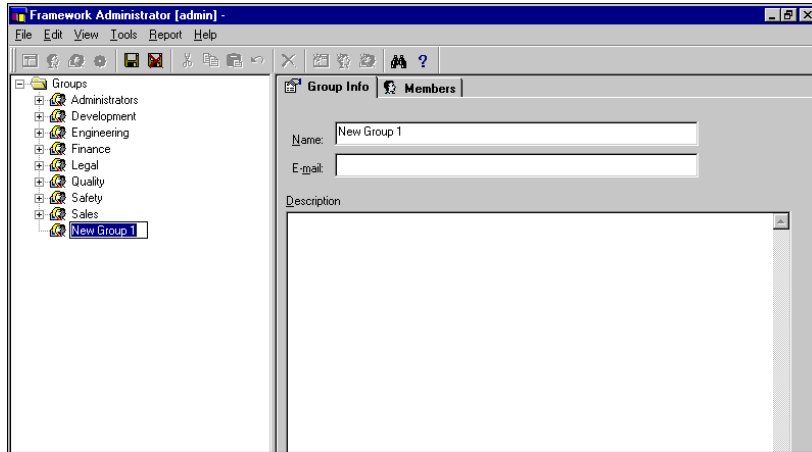
2. Enter a name and description for the group.

3. Enter a group email address if desired.

    Note: This email address is used for information only and has no effect on notifications.
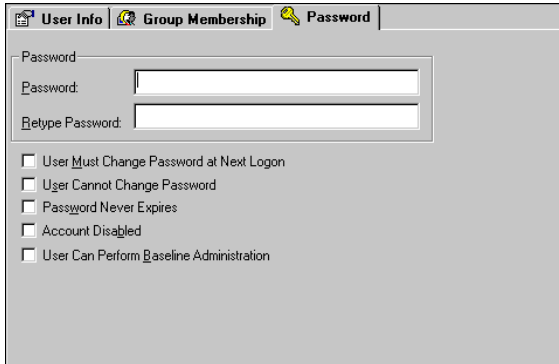
4. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete the group, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

Assigning Users to a Group

To assign users to a group within the Group View:

1. Click the **Members** tab. The tab is displayed as shown on the following page.

Borland
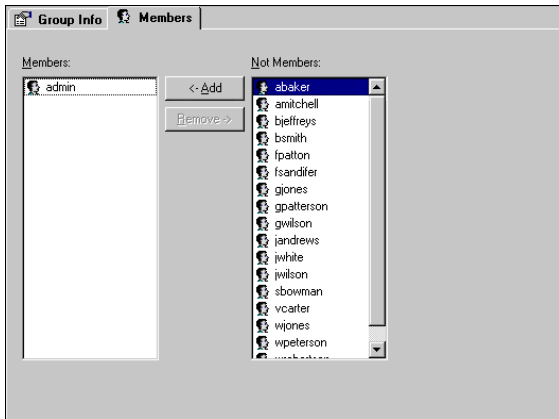
2. Select the users to add to the group from the **Not Members** list box.

    *Note: Use the **SHIFT** key to select a range of users, or the **CTRL** key to select multiple users individually.*

3. Click the **Add** button to move the selected users to the **Members** list box.

    Note: When a group is being modified, the group list displays a lock icon on the group name, meaning that the group cannot be modified by anyone else at the same time.

    *Note: To remove users from a group, select the user(s) in the **Members** list box and click the **Remove** button.*

4. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

MODIFYING A GROUP

To modify a group:

1. Select **View > Groups** from the menu, or click the **Group View** button.

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2. Select the group to modify.

3. Select the tab containing the information to modify.

4. Edit the group information.

5. To save your changes, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

DELETING A GROUP

WARNING: IF YOU DELETE A GROUP, YOU CANNOT RECOVER DELETED DATA.

To delete a group:

1. Select **View > Groups** from the menu, or click the **Group View** button.

2. Select the group to delete.

3. Select **Edit > Delete** from the menu or click the **Delete** button.

   A message is displayed verifying that you want to delete the group.

4. Click **Yes** to delete the group, or **No** to save it.

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Chapter 6: Security

OVERVIEW

The security requirements for every company are different. A small company may require minimal or no security, whereas a company with hundreds of users and thousands of requirements may require multiple levels of security.

As an administrator, you must make a decision about what type of security your enterprise needs. There are essentially two security models:

- "**allow by default**"– this model allows everyone access by default, but the administrator can restrict access using security profiles

- "**deny by default**" – this model denies everyone access by default, but the administrator can allow access using security profiles

Once you have determined which security method your enterprise will use, you can modify the default profile or start creating new security profiles.

Security is disabled by default, and must be enabled on a per project basis. See "Enforcing Security for a Project" on page 99.

SECURITY PROFILES

The Framework Administrator controls user access to CaliberRM through security profiles. The Framework Administrator has a default security profile that can be used initially. See the section "Default Security Profile" on the following page for information on the default profile.

Security profiles are created in Framework Administrator, but security for a project is enforced or disabled in CaliberRM. See "Enforcing Security for a Project" on page 99 for more information on enforcing security.

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Security profiles:

- are created, modified and assigned to groups in Framework Administrator.

- determine in which requirement types group members can view, create, modify and delete requirements.

- determine what requirement attributes group members can modify.

Default Security Profile

The default security profile provides immediate security for a project once you enforce security for that project in CaliberRM (see "Enforcing Security for a Project" on page 99). All requirement types are assigned to the default profile, and may not be removed. The initial default access level is **Create**, allowing all users to create requirements. The initial default Delete level is **Owned**, allowing only the user who owns a requirement to delete it. Both of these levels can be changed at any time. For each attribute assigned to the requirement type, access is initially determined when the attribute is created, but can be modified at any time.

CREATING A SECURITY PROFILE

There are four steps to creating a security profile:

1. Choose what **Requirement Types** are assigned to the profile.

2. Choose the **Access** level for each type, which determines whether group members can see or create requirements of this type.

3. Choose the **Delete** level for each type, which determines what requirements of a specific type group members can delete.

4. Choose which attributes to assign to each requirement type and set the **Modification** level for each attribute. The modification level determines when group members can modify the attributes.

Note: For detailed information on requirement types and attributes, see "Requirement Types" on page 137, and "Attributes" on page 155.

Note: Assigning attributes to a requirement type within a security profile does not automatically assign the attribute to the requirement type in CaliberRM.

To create a new security profile:

1. In the Framework Administrator, select **File > Admin > Security Profiles** from the menu.

   The **Security Profiles** dialog box is displayed.
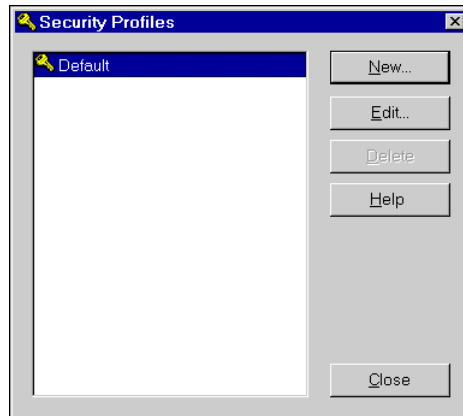
2. Click the **New** button. The **Security Profile Editor** is displayed as shown on the following page.

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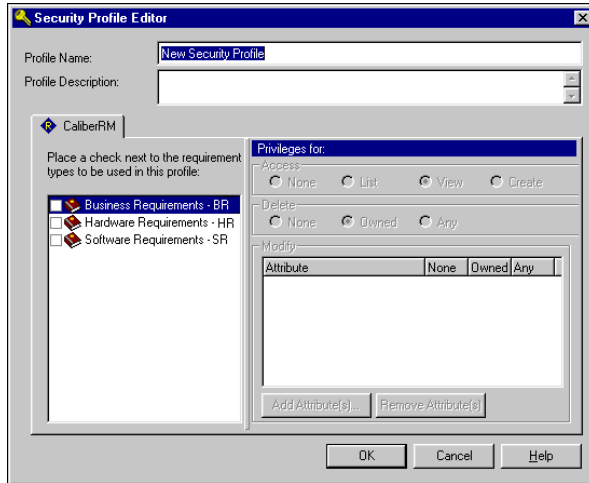
3.   Enter a name and description for the profile.

4.   To assign the requirement types to this profile, select the boxes next to the requirement types.

5.   For the selected requirement type, choose the appropriate option button for the level of **Access**. There are four access levels:

   •   **None**: The requirement type does not appear in the group members' lists.

   •   **List**: Group members can see a list of the requirements listed under the requirement type, but cannot access any data.

   •   **View**: Group members can see a list of the requirements listed under the requirement type, and can see data associated with the requirement.

   •   **Create**: Group members are able to create requirements in this requirement type.

6.   For the selected requirement type, choose the appropriate option button for the level of **Delete** access. There are three access levels:

   •   **None**: Group members cannot delete any requirements in this requirement type.

- **Owned**: Group members can delete only the requirements in this requirement type that they own.

- **Any**: Group members can delete any requirement in this type.

7. Select which attributes to assign to the selected requirement type by clicking the **Add Attribute(s)** button.

   Note: Adding attributes to a requirement type within a security profile does not automatically assign the attribute to the requirement type within CaliberRM.

   The **Attributes** dialog box is displayed.
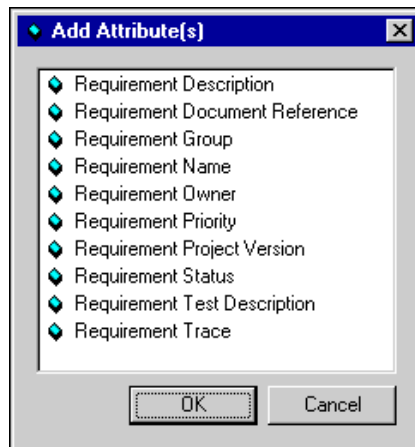
8. In the **Add Attributes** dialog box, select one or more attributes from the list. This adds the attribute to the requirement type *within this profile only.* If you do not select an attribute for the requirement type, the default profile is used.

   *Note: Use the **SHIFT** key to select a range of attributes, or the **CTRL** key to select more than one attribute.*

9. Click **OK** to add the attributes.

   *Note: To remove an attribute, select it in the list and click the **Remove Attribute(s)** button.*

10. For each attribute, choose the appropriate **Modification** access option button. This option determines what attributes can be modified for a requirement of this type. There are three access levels:

    • **None**: Group members cannot modify any attributes in this requirement type.

    • **Owned**: Group members can only modify attributes of the requirements they own.

    • **Any**: Group members can modify any attribute in this requirement type.

11. Click **OK** to save the security profile, or **Cancel** to exit without saving.

MODIFYING SECURITY PROFILES

⚠ **WARNING: MODIFYING THE DEFAULT SECURITY PROFILE AFFECTS ALL PROJECTS.**

To modify a security profile:

1. Select **File > Admin > Security Profiles** from the menu. The **Security Profiles** dialog box is displayed.

2. Select the profile to modify and click the **Edit** button. The **Security Profile Editor** dialog box is displayed.

3. Select the first requirement type in the list.

   Note: You cannot clear requirement types or remove attributes within the default security profile.

4. Select the option button for the appropriate **Access** level.

5. Select the option button for the appropriate **Delete** level.

6. Select the option button for the appropriate **Modification** level for each attribute in the list.

7. Repeat Steps 3-6 for the each requirement type you want to modify.

8. Click **OK** to save the security profile, or **Cancel** to exit without saving.

9. Click **Close** in the **Security Profiles** dialog box.

DELETING SECURITY PROFILES

To delete a security profile:

1. Select **File > Admin > Security Profiles** from the menu. The **Security Profiles** dialog box is displayed.

2. Select the profile you want to delete in the list.

   Note: You cannot delete the default security profile.

3. Click the **Delete** button. A message is displayed verifying that you want to delete the profile.

4. Click **Yes** to delete the profile, or **No** to save it.

ACCESS PROFILE EXAMPLES

Individuals and Groups may have different access levels in different projects, or more than one access level in a single project. If individuals and groups have different access levels in a single project, the access levels are combined and the least restrictive level of access is granted.

Individual Access

The user *bjones* may have **Create** access in one project, but **None** access in another.

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Group Access

The Marketing Department has the following security profile:

Requirement Type	Access Level	Delete Level	Modification Level
Web Site Marketing	Create	Owned	Any
Order Processing Marketing	Create	Owned	Owned
Order Processing	List	None	None
Warehouse	List	None	None
Hardware	Read	None	None
Software	Read	None	None
Billing	None	None	None

Members of the Marketing group can:

- create requirements for both the Web Site Marketing and Order Processing Marketing requirement types. They can also delete requirements for these types because they are Owned by the group. They can Modify any Web Site Marketing requirements, but only those Order Processing requirements they own.

- see a List of requirement names for Order Processing and Warehouse, but cannot see any data associated with those requirements, and cannot modify any requirements in these types.

- view data for the Hardware and Software requirement types, but cannot delete or modify any requirements.

- not see the Billing requirement type in the requirement list at all.

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Combining Security Profiles

An individual can be assigned more than one security profile in a project. This combined profile contains the least restrictive levels of access available between the two groups. If neither profile covers the requirement type or attribute, the default profile is used.

For example, the user *tjohnson* may be in two different groups in one project and each group may be assigned different security profiles. *Tjohnson's* security access is then a combination of the two profiles, and *tjohnson* is granted the least restrictive level of permission found in either profile.

A Group can also be assigned more than one security profile in a project. This combined profile contains the least restrictive levels of access available between the two groups. If neither profile covers the requirement type or attribute, the default profile is used.

For example, the Developer group is assigned both the Developer and the Tech Support profiles, as shown on the following page.

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DEVELOPER PROFILE

Requirement Type	Access Level	Delete Level	Modification Level
Marketing	List	None	None
Hardware	Create	Any	Owned
Software	Create	Any	Owned
Order Processing	View	None	None

TECH SUPPORT PROFILE

Requirement Type	Access Level	Delete Level	Modification Level
Marketing	None	None	None
Hardware	View	None	None
Software	View	None	None
Order Processing	View	None	None

COMBINED PROFILE

Requirement Type	Access Level	Delete Level	Modification Level
Marketing	List	None	None
Hardware	Create	Any	Owned
Software	Create	Any	Owned
Order Processing	View	None	None

Members of the Developer group can:

- see a list of Marketing requirements,

- create and delete Hardware requirements, and modify those they own,

- create and delete Software requirements, and modify those they own,

- view Order Processing requirements.

ENFORCING SECURITY FOR A PROJECT

Security profiles are created in Framework Administrator and enforced and disabled in CaliberRM, by individual project. You must have at least CaliberRM administrator privileges to enforce security. Administrators can also modify security profiles in CaliberRM. See "Modifying Security Profiles" on page 94 for more information.

To enable or disable security for a project, select the appropriate option button in the **Security** area of the **Project Info** tab.

Enforce or disable security for a project

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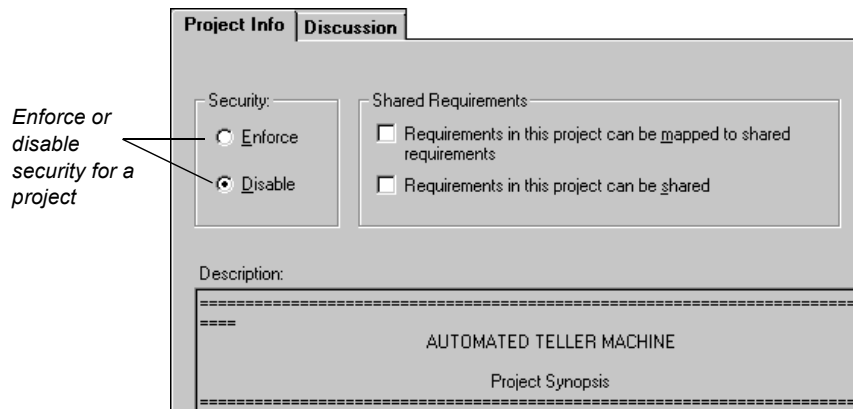
Chapter 7: Database Administration

CaliberRM provides an automated system, called DB Manager, for performing database administration. This feature simplifies and expedites many common database maintenance tasks. The most common function is database backup, described below. For information on the other DB Manager commands and their functions, see the table beginning on page 107.

WARNING! IF YOU ARE RUNNING BACKUP TAPES OF THE SYSTEM, MAKE SURE THEY <u>DO NOT</u> BACKUP THE SQMDB DIRECTORY AT DRIVE:\BORLAND\ CALIBERRMSERVER\VERSANT\DB\SQMDB. TO ENSURE THIS DOES NOT HAP-PEN, DO NOT BACK UP ANY OF THE DIRECTORIES FOUND IN THE DRIVE:\ BORLAND\CALIBERRMSERVER DIRECTORY.

DATABASE BACKUP

IMPORTANT! BE SURE TO VERIFY YOUR BACKUPS PERIODICALLY. BORLAND RECOMMENDS THAT YOU BACKUP THE PRODUCTION SERVER AND RESTORE AND TEST BACKUPS OF CALIBERRM PROJECT DATA ON A TEST SYSTEM. RESTORING AND TESTING YOUR BACKUPS HELPS TO ENSURE THAT YOUR DATA IS BEING BACKED-UP CORRECTLY.

To create a backup file of your database:

1. Log on as the database administrator (DBA) to the machine where the database resides.

    Note: You can determine the DBA by opening a command prompt and enter-ing dbuser -list sqmdb.

    WARNING! USING THE INCORRECT ACCOUNT COULD RESULT IN A BACKUP FILE THAT CONTAINS INCORRECT OR NO DATA.

    Note: The user name is case sensitive and must be exactly the same as used when the database was created.

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The install utility created a directory called **\CaliberRM_Backup** in the root of the drive where you installed the CaliberRM server. This is the default (preferred) location for the backup file.

2. Select **Programs > Command Prompt** from the Windows **Start** menu.

3. Enter the following command on one line:

    dbmgr -backup

4. Check the **\CaliberRM_Backup** folder and verify the **SQMDB.bak** file is present and is larger than 1 MB.

Note: The dbmgr -backup uses the database vbackup command, which does not require that the database be stopped or users be logged off. The vbackup utility and any scheduling software must be run under the account of the user that created the SQMDB database. Vbackup will create an sqmdb.bak file under non-creator accounts, but the sqmdb.bak file contains invalid data and cannot be restored.

The database backup command can be run as part of a nightly batch process detailed on page 103. The procedure backs up all of the committed and saved content in the database to an external file on the server. This file can then be backed up to removable media and safely stored in accordance with your standard operating procedures.

RESTORING A DATABASE FROM A BACKUP

Note: Restoring the database requires that the user be logged off the system.

To restore a database from a backup:

1. Log on as the DBA to the machine where the database resides.

    Note: The user name is case sensitive and must be exactly the same as used when the database was created.

2. Select **Programs > Command Prompt** from the Windows **Start** menu.

3. Enter the following command:

    dbmgr -stop

4. Enter the following command on a single line at the command prompt:

vbackup -device drive:\CaliberRM_Backup\SQMDB.bak -restore SQMDB

substituting "drive" for the letter of the drive where the CaliberRM server is installed.

5. At the next command prompt, type the following command:

    dbmgr -start

SCHEDULING A DAILY CALIBERRM DATABASE BACKUP

Note: The following procedure uses a Microsoft Windows utility that was current at the time of this writing. Your process may be different. Please refer to your operating system's documentation for scheduling a backup.

To schedule a database backup:

1. Complete steps 1-2 starting on page 101.

2. Create a text file named ***BackupCaliber.cmd*** that contains the line:

    dbmgr -backup drive:\CaliberRM_Backup\SQMDB.bak

    substituting "drive" for the drive where the CaliberRM server is installed.

3. Save the file in the **\CaliberRM_Backup**\directory that was created during installation.

4. Open the **Control Panel**.

5. Double-click the **Scheduled Tasks** icon.

6. Double-click the **Add a Scheduled Task** icon. The **Scheduled Task Wizard** dialog box is displayed.

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7. Click **Next**. The second Wizard screen is displayed.

Click **Browse** and navigate to drive:\CaliberRM_Backup, substituting "drive" for the drive where the CaliberRM server is installed.

8. directory and select BackupCaliber.cmd.

9. Click **Next**. The third Wizard screen is displayed.
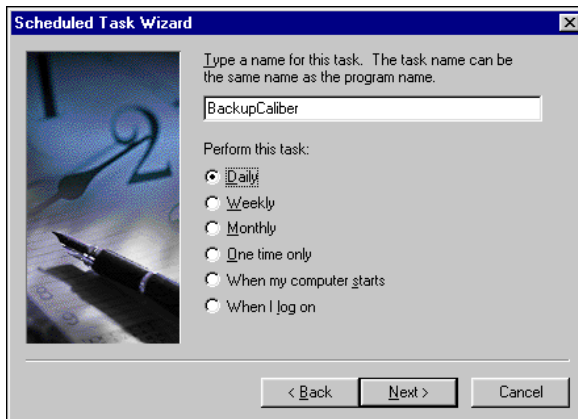
10. Select the **Daily** option button and click **Next**. The fourth Wizard screen is displayed.

11. Set the **Start time**, select the **Every Day** option button and set the **Start date**.

12. Click **Next**. The fifth Wizard screen is displayed.

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13. Enter the DBA of the CaliberRM database and the DBA password.

    Note: The vbackup utility and any scheduling software must be run under the account of the user that created the SQMDB database. Vbackup will create an SQMDB file under non-creator accounts, but the sqmdb.bak file will contain invalid data and cannot be restored.

14. Click **Next**. The last Wizard screen is displayed.

15. Review the screen and click **Finish** to complete the addition of the task, or **Back** to make any changes.

    The task should now appear in the **Scheduled Tasks** directory.
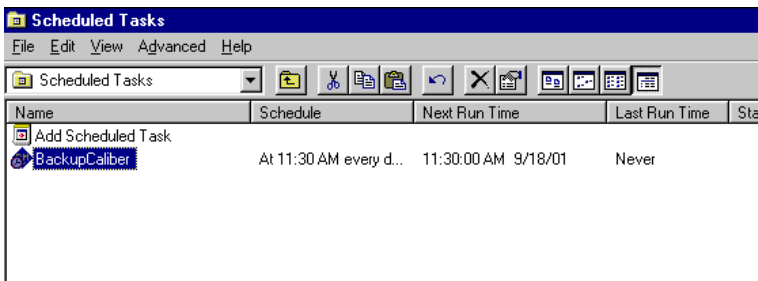
DB Manager Command Switches

DB Manager uses command line switches to run each utility. The switches and their usage are detailed in the table below.

WARNING: ALL COMMANDS EXCEPT FOR THE DETAILED HELP COMMAND REQUIRE THAT ALL USERS BE LOGGED OFF OF CALIBERRM.

Switch	Command	Usage
dbmgr –?	Detailed Help	explains the commands and switches
dbmgr –addvol	Add Volume	extends the size of a database as it nears maximum capacity
dbmgr –backup	Database Backup	backs up your database
dbmgr –dropclass	Dropclass	drops unreferenced objects from the database; needed after an upgrade
dbmgr –fix	Fix Links	repairs any broken links in the database after you scan the database
dbmgr –free	Free Space	displays the amount of free space in the database; useful for determining whether the Add Volume or Optimize Commands should be performed
dbmgr –new <– sample or –empty> <dbname>	Create Database Command	creates a new database ready for use; the sample switch loads the Automated Teller Machine sample database
dbmgr –defrag dbname]	Reorganize	increases the maximum capacity of your database and places all data into a single system volume. Also reorganizes the data (much like a disk defragment) for optimum performance
dbmgr –scan	Database Scan	scans the database for bad links and prints the information
dbmgr –start	Start Database	starts a CaliberRM server and database

*fields in brackets (< >) must be included; fields in braces ([ ]) are optional

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Switch	Command	Usage
dbmgr –stop	Stop Database	stops a CaliberRM server and database
dbmgr –upgrade	Upgrade Database	upgrades the current database to the current version; performed automatically during an install

*fields in brackets (< >) must be included; fields in braces ([ ]) are optional

CREATING A NEW DATABASE USING DB MANAGER

You can create a new blank database or populate it with sample data using DB Manager.

To create a new database:

1. Log on to the machine where the database resides as an administrative user.

    Note: *This user becomes the DBA for the new database.*

2. Select **Programs > Command Prompt** from the Windows **Start** menu.

3. Enter the following command, substituting "database name" with the name you want for your new database.

    dbmgr -new -empty database name

    Note: *If you want the new database to contain sample data, substitute **- empty** with **-sample**.*

INCREASING DATABASE SIZE USING THE DEFRAG COMMAND

If your database is reaching maximum capacity, you have the option of increasing the maximum capacity of that database and reorganizing the data.

To optimize your database:

1. Log on to the machine where the database resides as the DBA.

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Note: The user name is case sensitive and must be exactly the same as used when the database was created.

2.   Select **Programs > Command Prompt** from the Windows **Start** menu.

3.   Enter the following command:

dbmgr -defrag [new database name]

*Note: You have the option of entering a new database name after **-defrag** if you want to name the database. Otherwise, the system creates a default name that consists of your current database name with a _n appended to the end, where n is a sequential number (e.g. your_database_1).*

MOVING A DATABASE

To move a database from one machine to another:

On the machine where the database resides:

1.   Log on as the DBA.

Note: The user name is case sensitive and must be exactly the same as used when the database was created.

2.   Select **Programs > Command Prompt** from the Windows **Start** menu.

3.   Enter the following command:

dbmgr -backup

4.   Enter the following command:

dbmgr -stop

5.   In Windows Explorer, copy the **logical.log**, **physical.log** and **system** files from the database directory onto a network drive, or some type of movable media to move it to the new machine.

On the machine you want to move the database to:

1. Log on as the DBA and install CaliberRM.

2. Select **Programs > Command Prompt** from the Windows **Start** menu.

3. Enter the following command:

    dbmgr -stop

4. In Windows Explorer, copy the **logical.log**, **physical.log** and **system** files from the current location on a network drive, or some type of movable media to *c:\tbicaliber\servers\versant\db\sqmdb* directory.

    Note: If you changed the installation directory during installation, then use that directory instead of c:\tbicaliber\servers.

5. In the Dos prompt window, enter the following command:

    dbmgr -start

VERSANT DOCUMENTATION

The following sections contain documentation from Versant Software for the Versant database.

Vbackup Utility

usage: vbackup [options] command
where options are one or more of:

- -level <level>
- **Level 0:** Backup the entire database.
- **Level 1:** Backup changes since the last level 0 backup.
- **Level 2:** Backup changes since the last level 0 or level 1 backup.

  -device <filename>

```
        -position <position>
        -capacity <capacity>
        -blocking <blocking>
        -comment <comment>
        -rollforward
        -aggression <aggression>
        -script <script>
```

and command is one of:

```
        -backup <database-names>
        -restore <database-name>
        -off <database-names>
        -log <database-names>
        -info <database-names>
        -list
```

Alternatives for the option parameter are:

- **-level:** Specify incremental level of backup.

- **-device:** Specify the backup or restore device.

- **-position:** Specify position on tape for backup or restore. (Unix only)

- **-capacity:** Specify tape capacity. (Unix only)

- **-blocking:** Specify number of bytes to read or write at a time. (Unix only)

- **-comment:** Specify a comment to be associated with a backup.

- **-rollforward:** Enable roll forward archiving during backup.

- **-aggression:** Specify buffer flushing interval.

- **-script:** Specify a script from which to run vbackup.

Alternatives for the command parameter are:

- **-backup:** Back up a database.

- **-restore:** Restore a database.

- **-off:** Disable roll forwarding.

- **-log:** Start roll forward archiving.

- **-info:** Provide information about the contents of a backup file.

- **-list:** List the set of backups necessary to restore a database. This parameter requires use of the -device option parameter.

The purpose of the vbackup utility is to allow recovery from a device failure or from accidental deletion of data. If you use just the backup and restore features, you can recover to the point of the last backup. If you also use the roll forward features, you can recover to the point of the last committed transaction.

General Usage Notes

To use vbackup on a database, you must be the user who created the database, and invoke the command on the machine where the database physically resides.

If a database device is completely destroyed, you can recreate the database directories on another device with makedb and then use vbackup to both create and restore the database in one step.

If the recoverable error "device not ready" is encountered, you are given a chance to correct the error and resume the backup or restore. Except for this recoverable error, backups are not interactive and can therefore be called from a script or batch file.

For options and commands, it is not necessary to specify the full flag as long as enough is specified to be unambiguous. For example, since no other flag begins with 'd', you can shorten -device to any of the following: -devic, -devi, -dev, -de, or -d.

Commands

For the command parameter, you can use one of the following.

-backup dbname1 [dbname2 ...]

Back up the one or more local databases specified as dbname.

You can back up multiple databases to a single tape drive, but not to a single file. To back up multiple databases to files, you must invoke the command multiple times, each time using a different file name.

Database backups can be "on-line," which means that a database can be backed up while it is being used.

Backups can be "incremental," which means saving only changes made since the last backup, or "full," which means saving the entire database.

If multiple databases are backed up with a single command, the first one is stored in the position specified in the position parameter (see "Option Parameters" on page 117) and any additional ones are appended after it.

A database backup saves the results of all transactions committed at the time vbackup is invoked. For additional safety, you can also to use the -rollforward option in conjunction with the -backup command, but this is rarely necessary. This ensures that no log records are discarded unless they have been archived, either with another backup or as a result of roll forward archiving with the -log command.

You must invoke the -backup command on the machine on which the database to be backed up resides. You cannot backup a remote database.

For example, to backup a database named group to the file /tmp/level0 and also turn roll forwarding on:

vbackup -dev /tmp/level0 -rollforward -backup group

For this example, you will then see something like the text shown below (the version number actually shown will match your release number).

Invoking -restore immediately stops the specified databases (if running) and set them to dba/single-connection mode. After the restore is complete, the database mode of the specified databases will be set to multi-user mode.

Before the restore begins, you are given an opportunity to save the log files so that you can roll back to the last committed transaction.

The first restore done must always be a level 0 restore. Once this restore has successfully completed, you are asked if you would like to do an additional level of restore or if you would like to quit.

If you answer **yes** to do another restore, you can insert a tape with any level 1 or 2 backup that is incremental to the level 0 from which you just restored.

VERSANT Utility VBACKUP Version 5.0.5

Copyright (c) 1989-1996 VERSANT Object Technology

Backing up database 'group' to device '/tmp/level0':

     0%   50%   100%

    | | | | |

....

Backup has completed successfully.

-restore dbname1 [dbname2 ...]
Restore the one or more local databases specified as dbname.

Before invoking the restore command, you must first locate the backups from which you will be restoring. If the database no longer exists, you must use your own records to determine the required backups. If the database is intact and you are

restoring because you have accidentally deleted important data, you can use the -info command to list the backups necessary to restore to the most recently backed up state.

Once you know what your backups are, you must next locate the files in which they are stored. You are also asked for a safe location to which the current database logical log file can be copied so that it is not overwritten during the restore.

You must invoke the -restore command on the machine on which the database to be restored resides. You cannot restore a remote database.

Failure Conditions

When a restore starts, vbackup first copies the existing log file to a backup file name _backup_.log. If you encounter a failure during the restore operation, you need to copy the backup file to your logical log file, which is, by default, named logical.log. After doing this, you can retry to restore the database. If you do not copy the backup file to your logical log file before repeating a restore, you may lose the changes made by all recent committed transactions.

For example, to restore the database sqmdb from the file sqmdb.bak that is located in the root of the C:\ drive:

> **vbackup -dev c:\sqmdb.bak -restore group**

On the following page is a sample of the interactive dialog and output you will see during a backup.

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VERSANT Utility VBACKUP Version 5.0.5

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Restoring database 'sqmdb' from device 'c:\sqmdb':

During roll forward, would you like to apply records from the database's current log file in addition to any archived records? [default = yes]

This logical log file must then be copied to a safe location so it is not overwritten during the restore.

Enter the path of the logical log [default = '/versant/db/group/logical.log']

Enter the path for storing the copy [default = '/versant/db/group/_backup_.log']

0%   50%   100%

| | | | |

....

Restore has completed successfully.

After you have verified that the database was successfully restored, remember to remove '/versant/db/group/_backup_.log'.

At this point, when you quit, Versant will apply all log records in the file _backup_.log to the database.

If an error occurs and you cannot complete the restore and/or roll forward, before trying again, replace your logical log file with the _backup_.log file.

-info dbname1 [dbname2 ...]

List the set of backups and roll forward archives necessary to restore the specified databases to their most recently backed up state. If no backups have been made and roll forward has not been used, this list will be empty.

List entries have the following format:

Level backup_level made on date/time. comment

Where:

- **backup_level:** The incremental level of the backup: 0, 1, or 2.
- **date/time:** The date and time of the backup.
- **comment:** The comment, if any, entered at the time of the backup.

In many circumstances, such as restoring deleted objects, list information provided by -info will be available. However, if you are restoring from a damaged database, the same events that damaged your database may also damage backup list information. Accordingly, we recommend that you maintain your own records of the backups necessary to restore a database and not count on -info being able to provide the backup list.

The -info command will also tell you whether roll forward logging is currently on.

Option Parameters

For the options parameter, you can substitute zero or more of the following options.

-level [0 | 1 | 2]

The incremental level of backup to perform, either 0, 1, or 2. The default value is 0. Borland recommends always using level 0. This option will be ignored unless it is being used with the -backup command.

The level options are:

- **level 0:** Perform a full backup. (Recommended)
- **level 1:** Back up all changes made since the last level 0 backup.
- **level 2:** Back up all changes made since the last level 0 or level 1 backup, whichever was most recent.

The most recent set of backups can be viewed with the -info command. When a database is small, there is no problem with saving its entire state every time it is

backed up, but as database size increases, it becomes more important to set the level in a way which minimizes backup size and time.

- **-device device_name:** The backup device on which to read or write. Under NT, this must be a disk file.

- **-comment backup_comment:** Associate a comment with a backup. The default is no comment.

This option only makes sense when used with the -backup command and will be ignored when used with other commands. The comment specified will be stored with the backup and in the database and will appear when information about the backup is listed with the -list or -info commands.

A comment is useful for specifying the name or label of the tape on which the backup was made. When providing a comment, it is a good idea to enclose the comment string with single quotes. This prevents the shell from misinterpreting it as multiple arguments.

Restoring a Database

Before you attempt to restore a database:

1. Determine what backup files you need.

   If you are recovering from a deletion or damaging of key objects, you can use the -info option to vbackup to list the set of backups necessary to restore the specified databases to their most recently backed up state. If list information is not available, you will have to rely on your own records. (See also the comments for the -info option.)

2. Locate and examine files on tapes or other backup device.

   Once you know what backups are needed, you must next locate the tapes or file devices on which they are stored. You can use the -list option to vbackup to list the backup files stored on a backup device.

3. Perform the restore.

    To restore from a device, use the -restore option to vbackup. You must restore in the proper order as listed by -info or your own records, working from the last full backup to the most recent incremental backup. (See also the comments for the -restore option.)

Makedb Utility

Usage: makedb [options] <dbname>

options:

- **-g:** group database
- **-p:** personal database, the default
- **-owneruser:** make user as owner of database directory
- **-cpprofile db:** copy profiles from the specified db directory
- **-nofeprofile:** do not create front-end profile
- **-logging:** turn logging on
- **-locking:** turn locking on
- **-mtlatch:** turn single_latch off
- **-noprint:** suppress display messages
- **dbname:** database name

If it does not already exist, create a database directory named dbname per the options in the options parameter, and, if they do not already exist, create database support files.

You must run makedb or create a database directory and profile files manually before creating a database with createdb.

For a remote database, append the node name to the database name using the syntax dbname@node.

For options you can substitute:

- **-g:** Group database. Group databases are accessible to many users at the same time.

- **-p:** Personal database. The default. Personal databases are accessible to one application at a time.

- **-owner user:** Make user the owner of the database directory. The default is to use the current login. You can only make someone else the owner if you are logged in as the Administrator.

- **-cpprofile db:** Copy the profile file profile.be from the specified db directory to the directory for the new database. This option works only if both databases are on the same machine. If only a database name is used rather than a full path name, the db directory under the database root directory is searched.

- **-nofeprofile:** Do not create an application process profile.

- **-logging:** Turn short transaction logging on.

- **-locking:** Turn short transaction locking on.

- **-noprint:** Do not display any messages while the command runs.

The directory created will be: /dbroot/dbname

A directory for the database that branches from the database root directory. The name of the directory will be the same as the database name specified as dbname.

Database support files that will be created, if they do not already exist, are:../.osc/dbname

An application process profile file, located in the .osc directory branching from your home directory. This file contains operating parameters used when this database is a session database.

- **profile.be:** A database server process profile file, located in the database directory. This file contains database creation and operating parameters.

- **.lock:** A lock file, which indicates whether or not the database has already been started.

- **.dbtype:** A database type file, which indicates whether this is a personal or group database.

Examples:

        makedb my_personal_database
        makedb -g our_group_database

Createdb Utility

Usage: createdb [options] <dbname>

options:

- **-ip:** Reallocate and initialize the database
- **-noprint:** Suppress display messages
- **dbname:** Database name

Create, format, and initialize a new database with the name dbname and either make the new database a part of an existing distributed database system or start a new database system. The database name dbname must be unique for the distributed database system it will belong to.

You must be the owner of the database (the database administrator) or the NT System Administrator to run this utility.

For a remote database, append the node name to the database name using the syntax database@node.

Options that may be specified in the options parameter are:

- **-i:** Reserve space for the system volume.

Reserving space can prevent you from running out of space at runtime. For example, suppose you set the size of the system volume as 100 megabytes in your profile, but you really have only 60 megabytes physically available. In this case, if you use -i, you will immediately get an out-of-space error, but if you do not use -i, you will get an error at runtime as the system volume dynamically expands. If you have defined multiple storage volumes and the physical space in one volume is less than the logical space, you will get an out-space-error even though there is space

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available in the next volume. Pre-allocating space may improve performance, because space will not have to be dynamically allocated. However, pre-allocating space will slow down the process of creating the database, and because the space is used immediately, it will prevent it from being used for other purposes. Space for log volumes is always pre-allocated according to the parameters set for the plogvol and llogvol size specifications.

- **-noprint:** Suppress display messages while running.

The createdb utility will update the osc-dbid file to register the new database with the existing distributed database system. The file osc-dbid containing the path and name of all databases in the system must be visible from your machine when you run createdb.

Examples:

createdb mydb

createdb -i mydb

Components of the newly created database will be:

- **System volume:** A system volume for catalog information and data storage, with a name, location, size, and device according to the specification in the server process profile file profile.be.

- **Physical log volume:** A physical log volume for physical data information related to logging and recovery, with a name, location, size, and device as specified in the server process profile file profile.be.

- **Logical log volume:** A logical log volume for transaction undo-redo information related to logging and recovery, with a name, location, size, and device as defined in the server process profile file profile.be.

- **.sharemem:** A shared memory file, which contains a shared memory identifier.

Dbinfo Utility

Usage: dbinfo [options] <dbname>

options:

- **-mset multi-user mode:** This is the normal mode for a database. For a group database, this means that, per the normal definition of a group database, any number of users can make any number of connections. For a personal database, this means that, per the normal definition of a personal database, only one user at a time can use it and can use it only as a session database.

- **-0set unstartable mode:** This mode prohibits all access to the database and prevents it from being started with the startdb utility or vutil tool. You should use the unstartable mode when you want to restore a database with the vbackup utility.

- **-1set dbaonly single-connection mode:** The database is startable, but it will only accept a single connection from a single client run by the database administrator.

- **-dset dbaonly multi-connection mode:** The database is startable, but it will only accept connections from clients run by the DBA.

- **-pprint existing database mode:** List the current database mode.

- **-ccreate a new .lock file:** This utility can be used only by the database administrator of a database. The database administrator is the user who created the database.

- **dbname:** The database name.

Determine or set the current mode of the database specified as database_name.

The dbinfo utility may be invoked either at the command line or through either the o_utility( ) or o_dbinfoapi( ) function.

You can change a database mode from one state to another at any time. After a new mode is set, it only affects new connections, and existing connections run without interruption. If you want to break existing connections, after running dbinfo, you must stop the database with stopdb.

Removedb Utility

Usage: removedb [options] <dbname>

Options:

- **-f :** Forcibly stop and remove the database immediately even if it is currently running and other users are connected to it. Without the -f option, the database will not be removed if it is in use by an active transaction. If it is in use, the message "Database in Use" will be printed and removedb will be terminated.

- **-rmdir:** Remove the database directory and all files in it as well as data.

- **-noprint:** Suppress display messages while running.

- **-dbname:** The database name.

Stop the database if it is running, destroy and remove all volumes of the database dbname, and delete the database from the system database identifier file osc-dbid.

For a remote database, append the node name to the database name using the syntax database@node.

The database system osc-dbid file must be visible from your machine before you run removedb. Only the owner of a database can remove it.

When you remove a database, all volumes associated with the database are removed. This includes any extra storage volumes that have been added after the database was created. However, the database directories and profiles are not deleted when you run removedb unless you specify -rmdir. If you do not delete the directories and files, you can recreate a removed database using the same directories and profiles.

If you delete database directories manually but do not run removedb, the database numerical identifier and information about the old name and path remain in the osc-dbid database system file. Also, if you delete the database directories manually, shared memory will not be removed.

Examples:

removedb my_db   removedb -f my_db   removedb -rmdir mydb

Chapter 8: CaliberRM Server Settings

SERVER CONTROL PANEL

Borland provides a control panel that allows you to configure your CaliberRM server.

Note: The control panel contains advanced options, that should only be changed if the server is not functioning properly and at the discretion of Caliber Product Support. For information about contacting Support, see "Borland Support" on page 7.

To access the control panel, select **Settings > Control Panel** from the Windows **Start** menu. Double-click **CaliberRM Server**. The **CaliberRM Server Settings** dialog box is displayed.

The properties that are set on the **Global Properties** tab are:
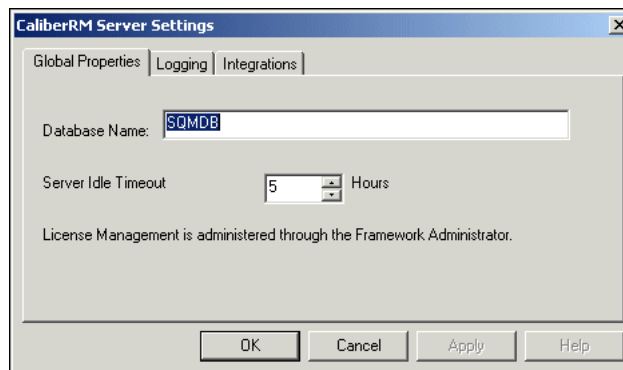
- **Database Name:** Allows you to change the name or location of your database.

- **Maximum # of Manager Threads:** Determines the number of threads used by the server manager. The maximum number of threads that can be used is 20,

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and the default for this option is 10. This option should only be changed at the direction of Borland Product Support.

- **Idle Timeout Time:** Determines how many hours the server will remain idle before it automatically recycles.

The properties that are set on the **Logging** tab are:
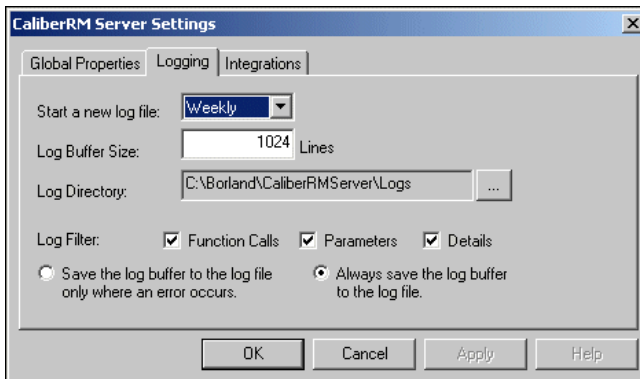
- **Start a new log file:** Determines how often you want to start a new log file.

- **Log Buffer Size:** Determines the number of traced transactions retained in memory.

- **Log Directory:** Determines the location of the log file.

- **Log Filter options:** Determines the level of filtering you want. A check indicates the option is selected.

  - **Function Calls:** When selected, the lowest level of filtering occurs.

  - **Parameters:** When selected, a medium level of filtering occurs.

  - **Details:** When selected, the highest level of filtering occurs.

- **Save log buffer option buttons:** Determines when the log buffer is saved to the log file.

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The properties that are set on the **Integrations** tab are:
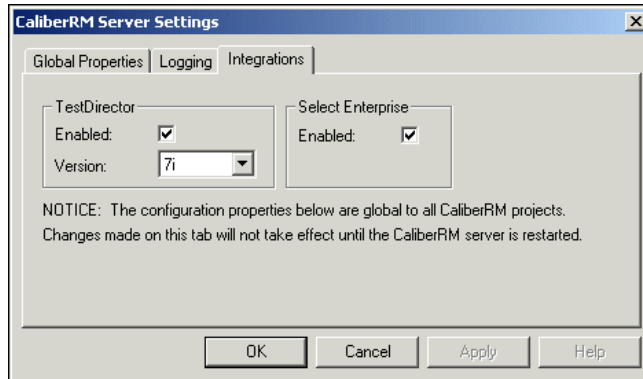
TestDirector Section:

- **Enabled:** Allows you to enable the TestDirector integration. A check indicates the integration is enabled.

- **Version:** Allows you to set the version of TestDirector you are using.

Select Enterprise Section:

- **Enabled:** Allows you to enable the Select Enterprise integration. A check indicates the integration is enabled.

Note: For more information on how to setup these integrations, see "Enabling Other Integrations" on page 422.

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Chapter 9: CaliberRM Administrators

There are two levels of administrative functionality: the SQM Framework Administrator and the CaliberRM Administrator. Framework Administrators perform the tasks particular to the SQM Framework and have access to most CaliberRM functions.

CaliberRM administrators are CaliberRM users that have special administrative rights in the Requirements Manager. They manage tasks that are requirement-specific. Depending on their security profile, CaliberRM administrators do not necessarily have access to all user-level functions.

CALIBERRM ADMINISTRATIVE TASKS

Selecting **File > Admin** displays the **Admin** sub-menu, which contains some of the commands for performing administrative tasks.
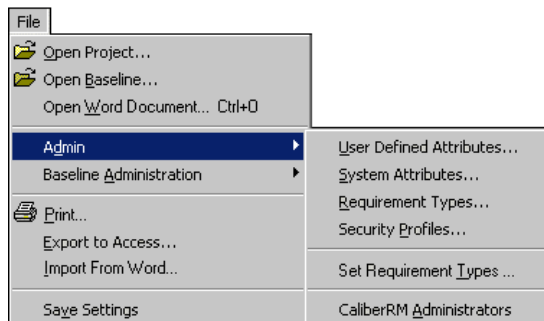
Before users can begin entering requirements, a user with at least CaliberRM administrative privileges must perform some administrative tasks to organize projects and to group requirements. These tasks include:

- Modifying security profiles. See "Modifying Security Profiles" on page 94.

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- Creating other CaliberRM administrators. See "Creating CaliberRM Administrators" on page 130.

- Enabling requirements to be mapped or shared. See "Enabling Shared and Mapped Requirements" on page 130.

- Enforcing or disabling security for a project. See "Enforcing Security" on page 131.

- Maintaining the glossary. See "Maintaining Project Glossaries" on page 132.

- Creating requirement types. See "Requirement Types" on page 137.

- Assigning requirement types to projects. See "Setting Requirement Types Within a Project" on page 152.

- Modifying system attributes. See "System Attributes" on page 155.

- Creating and assigning user-defined attributes. See "User-Defined Attributes" on page 158.

CREATING CALIBERRM ADMINISTRATORS

CaliberRM administrators are created in CaliberRM by SQM Framework administrators, or by other CaliberRM administrators. To assign CaliberRM administrators, select **File > Admin > CaliberRM Administrators** from the menu.

The list of users is displayed.

Select the box next to the names of the users that should have administrator privileges for all projects in CaliberRM.

ENABLING SHARED AND MAPPED REQUIREMENTS

Shared and mapped requirement must be enabled in CaliberRM by a CaliberRM administrator before a user can create mapped requirements.

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To enable shared and mapped requirements:

1. From the project drop-down list, open the project containing the requirements you want to share by clicking on the project name. The **Project Info** tab is displayed.

2. If the project that contains requirements you want to map, select the **Requirements in this project can be mapped to shared requirements** check box.

   If the project that contains requirements you want to share, select the **Requirements in the project can be shared** check box.

   To share and map requirements in the same project, select both boxes.

ENFORCING SECURITY

Security profiles created in Framework Administrator are enforced in the Requirements Manager on a per project basis. You must have at least CaliberRM administrator privileges to enforce security.

To enforce or disable security for a project, select the appropriate option button in the **Security** area of the **Project Info** tab.

Enforce or disable security for a project
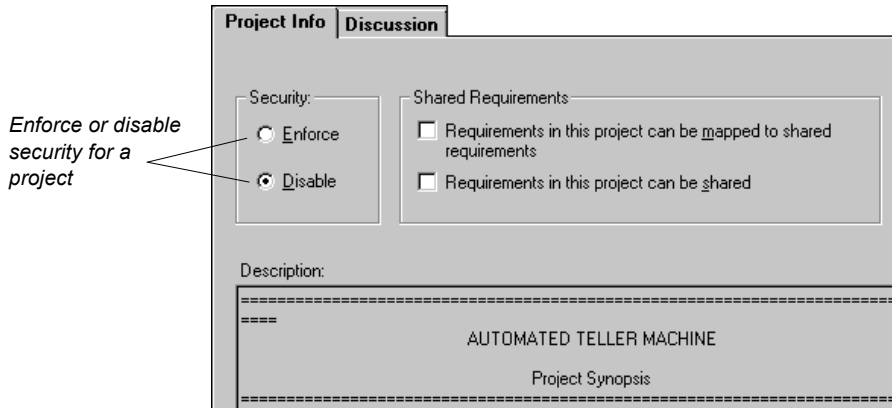

MAINTAINING PROJECT GLOSSARIES

In CaliberRM, you can have multiple glossaries that contain project-specific terms. Each project may have multiple glossaries assigned to it, with each glossary having a color assigned to it. When a term is selected, the color indicates which glossary the term belongs to. Project glossaries are created, modified and deleted in the Framework Administrator (see "Project Glossaries" on page 62) and terms are maintained by CaliberRM Administrators in CaliberRM.

Creating and Defining a Term

To create and define terms in the glossary:

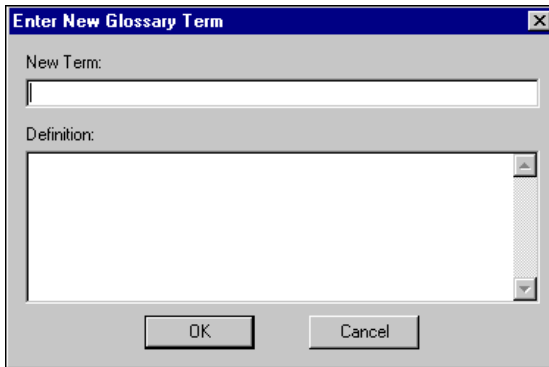1. Select **Tools > Glossary**.

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The **Glossary** dialog box is displayed.
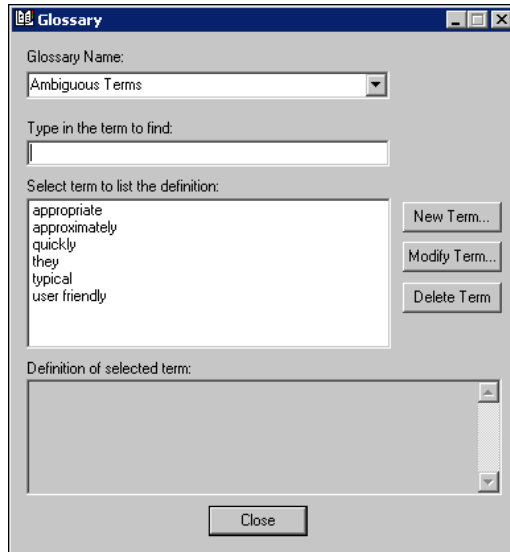
2. Select the glossary you want to add the term to from the drop-down list.

3. Click the **New Term** button.

   Note: The following characters are not allowed in creating a term in CaliberRM glossaries: !, ?, :, :, ", ', (,), [,], {, }, carriage returns, and line feed.

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The **Enter New Glossary Term** dialog box is displayed.

4. Enter the new term and its definition.

5. Click **OK**. The term and its definition are displayed in the **Glossary** dialog box.

6. Click **Close**.

Note: You can also add a term by right-clicking a word in a requirement description.

Modifying a Term

To modify a term and/or its definition:

1. Select **Tools > Glossary**. The **Glossary** dialog box is displayed.

2. Select the glossary that contains the term you want to modify from the **Glossary Name** drop-down list.

3. In the **Type in the term to find** section, enter the term you want to modify. The term is highlighted.

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4. Click the **Modify Term** button. The **Modify Glossary Term** dialog box is displayed.
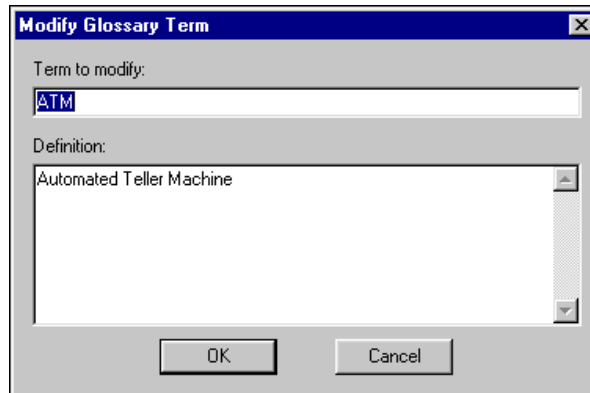
5. Make any necessary changes to the term or its definition.

6. Click **OK** to close the **Modify Glossary Term** dialog box.

7. Click **Close** to close the **Glossary** dialog box.

Deleting a Term

To delete a term and its definition from the glossary:

1. Select **Tools > Glossary**. The **Glossary** dialog box is displayed.

2. Select the glossary that contains the term you want to delete from the **Glossary Name** drop-down list.

3. In the **Type in the term to find** section, enter the term you want to delete. The term is highlighted.

4. Click the **Delete Term** button. A confirmation dialog box is displayed verifying that you want to delete the term.

5. Click **Yes** if you want to delete the term, or **No** if you want to cancel the deletion.

   The **Glossary** dialog box is displayed and the deleted term is no longer available in the glossary.

6. Click **Close**.

Chapter 10: Requirement Types

Requirement types are high-level groups of requirements and are typically classified by their function (i.e., Business, Marketing, GUI, Hardware, Software, Testing, etc.). Requirement type definition is an administrative task and requirement types are available for use in all projects.

CaliberRM supports multiple requirement types so that you can easily organize requirements. For example, a project may contain marketing, system, usability, software, coding and even testing requirement types. Requirements can be traced between requirement types to facilitate prioritization and aid in impact analysis.

Each requirement type can be customized using custom tabs and user-defined attributes. This is helpful because it allows you to track the information you need for each requirement type. For example, marketing requirements may need to track customer demand for each requirement, while software requirements may need to track estimated hours to implement. After you define attributes, you can assign them to custom tabs in each requirement type as needed. To learn more about user-defined attributes, see "User-Defined Attributes" on page 158.

CREATING A REQUIREMENT TYPE

There are two ways to create requirement types in CaliberRM: using the Requirement Type Creation Wizard or using Expert Mode. Expert Mode uses the dialog boxes to create requirement types, and is for those who are familiar with defining requirement type information.

Requirement Type Creation Wizard

Requirement types are created in the Requirements Manager. There are seven steps to creating a requirement type through the Requirement Type Creation Wizard. The wizard launches automatically when you select **File > Admin > Requirement**

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Types and click the **New** button, if you have selected the Wizard option in the CaliberRM **Options** dialog box. Select **Tools > Options > Wizards** to verify the wizard is selected.

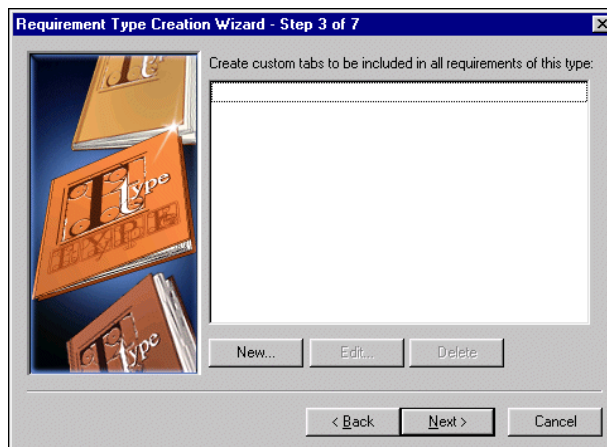*To create a requirement type using the Requirement Type Creation Wizard:*

1. Select **File > Admin > Requirement Types** from the CaliberRM menu. The **Requirement Types** dialog box is displayed.

2. Click the **New** button. Step 1 of the Requirement Type Creation Wizard is displayed.
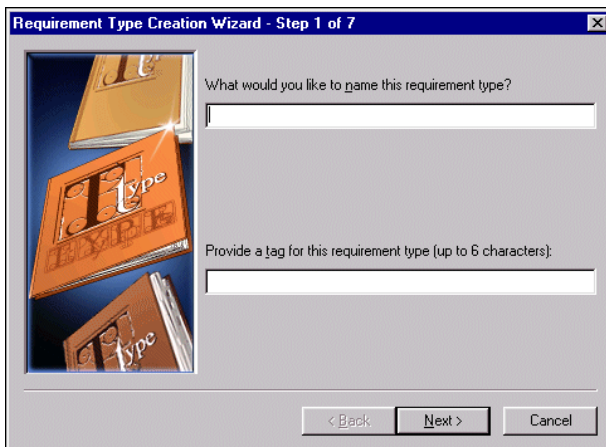
3. Enter a unique name and tag for the attribute.

    The tag is used as a prefix for the requirement ID number, and helps identify requirement types in the requirement grid and in reports. Typically, you would use a short tag (i.e., "SWR" for Software Requirements).

4. Click **Next**. Step 2 of the Requirement Type Creation Wizard is displayed as shown on the following page.
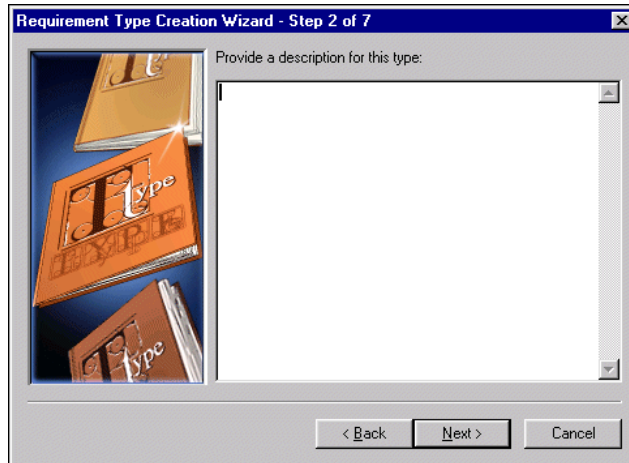
5. Enter a description for the requirement type.

6. Click **Next**. Step 3 of the Requirement Type Creation Wizard is displayed.

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7. Click the **New** button if you want to create a new custom tab for your new requirement type. See "Creating Custom Tabs" on page 147.

8. Click **Next**. Step 4 of the Requirement Type Creation Wizard is displayed.
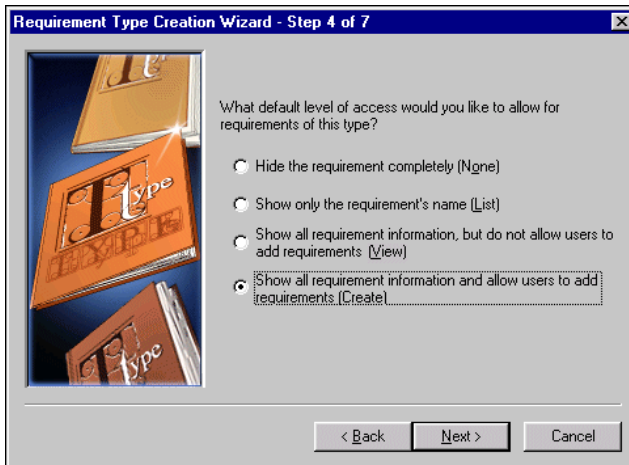
9. Choose the appropriate default access level for the requirement type:

> **None:** Does not allow users to see this requirement type at all.

> **List:** Allows users to see only a list of requirements of this type, but not the data.

> **View:** Allows users to see the requirements and their data, as well as modify attributes, but does not allow users to create requirements.

> **Create:** Allows users to see the requirements and their data, and allows users to modify and create requirements.

> *Note: See "Creating a Security Profile" on page 90 for more information on requirement type access levels.*

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10. Click **Next**. Step 5 of the Requirement Type Creation Wizard is displayed.
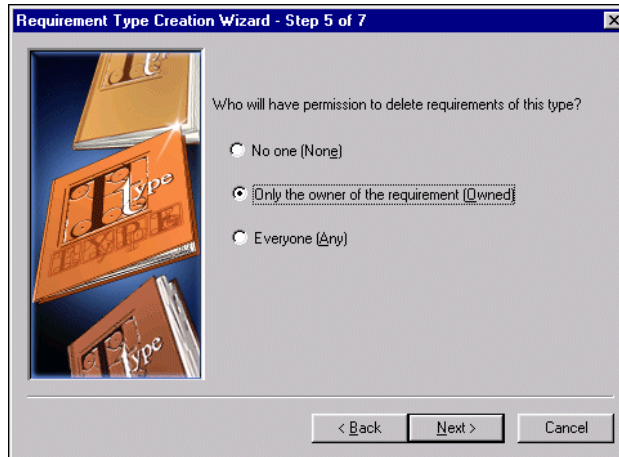
11. Choose the appropriate default delete level for requirements of the new requirement type:

    None: Does not allow the deletion of any requirements in that requirement type.

    Owned: Only allows deletion to the requirement the user owns for that requirement type.

    Any: Allows anyone to delete requirements of this type.

    Note: See "Creating a Security Profile" on page 90 for more information on requirement type delete levels.

12. Click **Next**. Step 6 of the Requirement Type Creation Wizard is displayed as shown on the following page.

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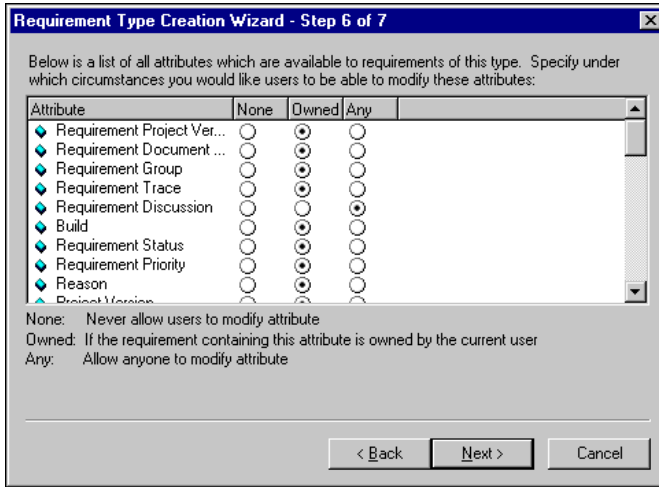
13. For each attribute listed, select the circumstances for modification. This determines whether or not users can modify the attribute in requirements of that type.

    None: Allows no modification to the particular attribute of the requirement type.

   **Owned:** Only allows modification to the particular attribute the user owns for that requirement type.

    Any: Allows any modification to the particular attribute for the requirement type.

    Note: See "Creating a Security Profile" on page 90 for more information on attribute modification levels.

14. Click **Next**. Step 7 of the Requirement Type Creation Wizard is displayed as shown on the following page.
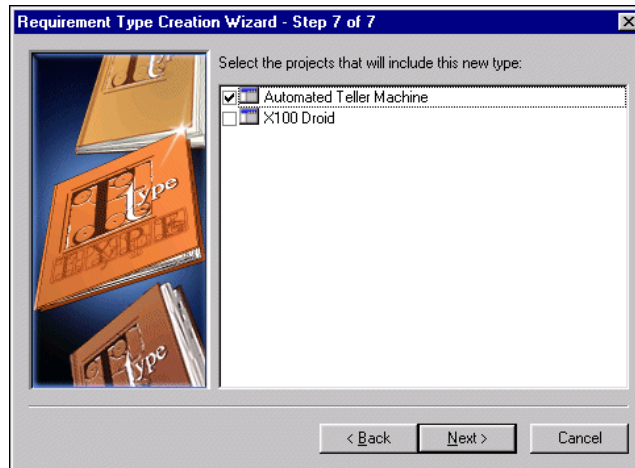
15. To select the projects you want to assign the requirement type to, select the box to the left of the project name.

16. Click **Next**. The **New Requirement Type Information** screen is displayed.

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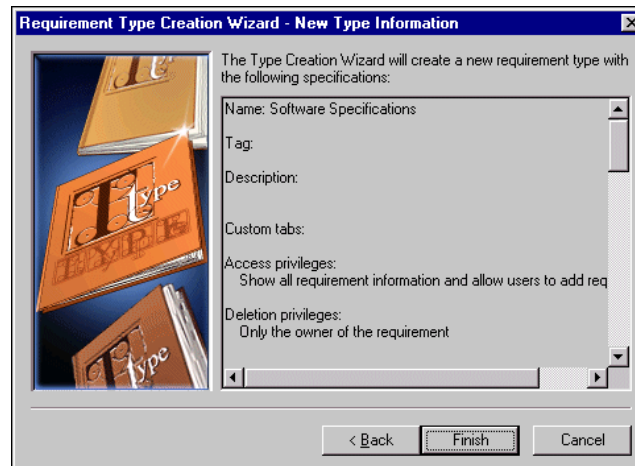
17. Verify the information you have entered. If the information is correct, click **Finish**. If not, click **Back** and make the necessary changes.

The requirement type is created.

Creating a Requirement Type Using Expert Mode

There are two steps to creating a requirement type using Expert Mode: defining the requirement type and setting the requirement type's default security access.

*Note: To create a new requirement type using Expert Mode, the option to use wizards must be cleared in **Tools > Options > Wizards**.*

Defining the Requirement Type

To create a requirement type:

1. Select **File > Admin > Requirement Types** from the CaliberRM menu. The **Requirement Types** dialog box is displayed.

2. Click the **New** button. The **New Requirement Type** dialog box is displayed.

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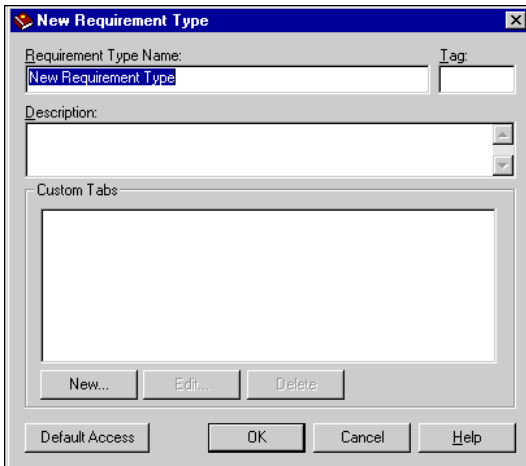
3. Enter a unique name and a description in the appropriate fields.

4. Enter a **tag** for the requirement type.

   The tag is used as a prefix for the requirement ID number, and helps identify requirement types in the requirement grid and in reports. Typically, you would use a short tag (i.e., "SWR" for Software Requirements).

5. You can create a custom tab for your requirement type by clicking the **New** button. See "Creating Custom Tabs" on page 147.

6. You can now set the requirement type's default security access. See "Setting the Default Security Access for a Requirement Type" below for more information.

7. Click **OK** to save the changes, or **Cancel** to exit the dialog box without saving.

8. Click **Close** in the **Requirement Types** dialog box.

Setting the Default Security Access for a Requirement Type

When you create a new requirement type, you can set its default security access. This access determines whether users can add, modify or delete requirements of this type. For more information on security and security profiles, see "Security" on page 89.

To set a requirement type's default security access:

1. Within a selected requirement type's dialog box, click the **Default Access** button.

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The **Default Access** dialog box is displayed.
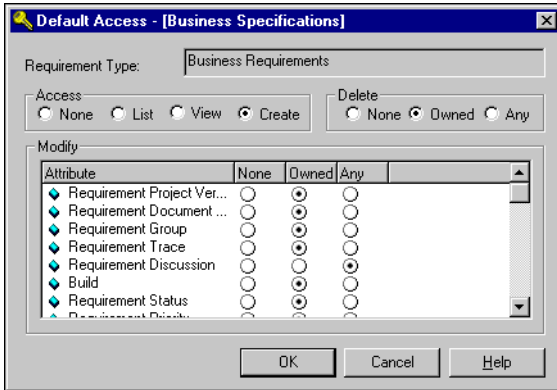
2. Select the option button for the appropriate **Access** level. Each option allows
    users in the groups assigned to the default security profile the various levels of
    access described below:

    None: Does not allow users to see this requirement type at all.

    List: Allows users to see only a list of requirements of this type, but not
    the data.

    View: Allows users to see the requirements and their data, as well as mod-
    ify attributes, but does not allow users to create requirements.

    Create: Allows users to see the requirements and their data, and allows
    users to modify and create requirements.

3. Select the option button for the appropriate **Delete** level:

    None: Does not allow the deletion of any requirements in that requirement
    type.

    Owned: Only allows deletion of the requirement the user owns for that
    requirement type.

    Any: Allows anyone to delete requirements of this type.

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4. Select the option button for the appropriate **Modification** level for each attribute in the list. This determines whether or not users can modify the attribute in requirements of the type.

   None: Allows no modification to the particular attribute of the requirement type.

   Owned: Only allows modification to the particular attribute the user owns for that requirement type.

   Any: Allows any modification to the particular attribute for the requirement type.

5. Click **OK** to save changes, or **Cancel** to exit without saving.

   Note: CaliberRM enforces security while creating a new requirement. You will be unable to modify fields unless permission is granted by your security profile.

CREATING CUSTOM TABS

You can create and delete custom tabs with specific user-defined attributes in CaliberRM.

To create custom tabs:

1. Select **File > Admin > Requirement Types** from the CaliberRM menu.

2. Select a requirement type from the **Requirement Types** list. The **Edit** button becomes available.

3. Click **Edit**.

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The window for the chosen requirement type is displayed.
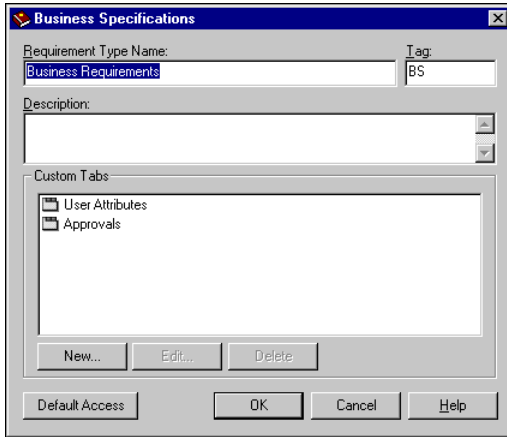
4. Click **New** in the **Custom Tabs** section of the requirement type window. The **New Custom Tab** window is displayed.

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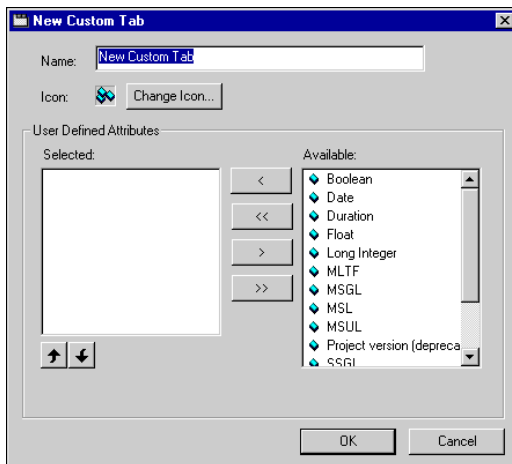
5. Enter a name for your new custom tab in the **Name** field. The name should be 64 characters or less to avoid display problems.

    *Note: You have the option to assign an icon for your custom tab by clicking the **Change Icon** button and navigating to the icon you want to use.*

6. Select the user-defined attribute(s) from the **Available** list and move to the **Selected** list by clicking the **Move Left** button. To choose all of the attributes in the list, select the **Move All Left** button.

    To change the attribute order, select attributes in the selected list and click the **Move Up** or **Move Down** button.

7. Click **OK**. The **New Custom Tab** window closes.

8. Click **OK** to close the window for the requirement type and add the custom tab.

    Note: Custom tabs are specific to the requirement type. Therefore, you must create a custom tab for each requirement type that you want to contain a custom tab.

9. Click **Close** to close the requirement types window.

    Note: User-defined attributes are assigned to requirements and displayed on custom tabs. If you display the same user-defined attribute on multiple custom tabs in a single requirement type, the user-defined attribute will be the same on all tabs. If you change the data on one tab, the data changes on all tabs.

DELETING CUSTOM TABS

Once you have created a custom tab, you may delete it if necessary.

WARNING: DELETING A CUSTOM TAB MAY REMOVE ATTRIBUTES FROM REQUIREMENTS OF THE AFFECTED REQUIREMENT TYPE. IF THE ATTRIBUTE IS ON MORE THAN ONE TAB IN A TYPE, THE DATA IS ONLY REMOVED FROM THE TAB YOU DELETE.

THIS IS A RESOURCE INTENSIVE OPERATION IF THERE ARE MANY REQUIREMENTS IN THE TYPE WHERE A TAB IS BEING DELETED. THIS SHOULD NOT BE DONE ON AN ACTIVE SYSTEM AS USERS MAY BE AFFECTED.

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To delete a custom tab:

1. Select **File > Admin > Requirement Types** from the CaliberRM menu. The **Requirement Types** window is displayed.

2. Select the requirement type containing the custom tab from the **Requirement Types** list.

3. Click **Edit**. The dialog box for the chosen requirement type is displayed.

4. Select the custom tab to delete.

5. Click **Delete**.

6. Click **OK** to close the chosen requirement type's window.

7. Click **Close** to close the Requirement Types window.

Your custom tab is deleted.

MODIFYING A REQUIREMENT TYPE

WARNING: MODIFYING A REQUIREMENT TYPE MAY AFFECT OTHER PROJECTS.

THIS IS A RESOURCE INTENSIVE OPERATION IF THERE ARE MANY REQUIREMENTS IN THE TYPE WHERE AN ATTRIBUTE IS BEING CHANGED. THIS SHOULD NOT BE DONE ON AN ACTIVE SYSTEM AS USERS MAY BE AFFECTED.

To modify an existing requirement type:

1. Select **File > Admin > Requirement Types** from the menu. The **Requirement Types** dialog box is displayed.

2. Select the requirement type to modify.

3. Click the **Edit** button. The dialog box for the chosen requirement type is displayed.

    *Note: You may also right-click on the requirement type in the requirement tree and select **Modify** in the pop-up menu to display the requirement type's dialog box.*

4. Modify the requirement type name, tag, description, security access and/or custom tab(s).

   For instructions on modifying security access, see "Setting the Default Security Access for a Requirement Type" on page 145. For instructions on modifying custom tabs, see "Creating Custom Tabs" on page 147.

5. Click **OK** to save the changes, or **Cancel** to exit without saving the changes.

6. Click **Close** in the **Requirement Types** dialog box.

DELETING A REQUIREMENT TYPE

WARNING: TO PREVENT DATA LOSS IN THE CURRENT PROJECT, AS WELL AS OTHER PROJECTS, YOU CANNOT DELETE A REQUIREMENT TYPE THAT IS IN USE IN ANY PROJECT.

THIS IS A RESOURCE INTENSIVE OPERATION IF THERE ARE MANY REQUIRE-MENTS IN THE TYPE WHERE AN ATTRIBUTE IS BEING CHANGED. THIS SHOULD NOT BE DONE ON AN ACTIVE SYSTEM AS USERS MAY BE AFFECTED.

To delete a requirement type:

1. Select **File > Admin > Requirement Types** from the CaliberRM menu. The **Requirement Types** dialog box is displayed.

2. Select the requirement type to delete.

3. Click the **Delete** button.

   A message is displayed verifying that you want to delete the requirement type.

4. Click **Yes** to delete the requirement type, or **No** to save it.

   Note: If the requirement type is in use in any project, you cannot delete it. You can, however, remove it from use in a project (see Setting Requirement Types Within a Project section below).

5. Click **Close** in the **Requirement Types** dialog box. The requirement type is deleted.

SETTING REQUIREMENT TYPES WITHIN A PROJECT

When you select a new project to work with, a dialog box is displayed asking you to choose the requirement types that will be used in that project. You must choose at least one requirement type before you can create requirements.

To set requirement types within a project:

1. Select a project to work with from the drop-down list or select **File > Admin > Set Requirement Types** from the CaliberRM menu. The **Project Require-ment Types** dialog box is displayed.
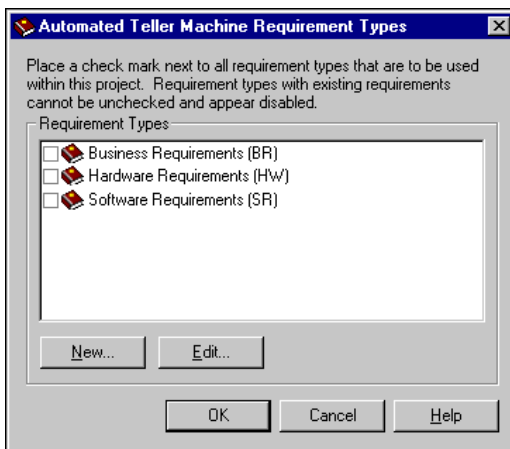
2. Select the box to the left of a requirement type to assign it to the current project.

    *Note: If the requirement type you want is not listed, you can create a new requirement type by clicking the **New** button (see "Creating a Requirement Type" on page 137).*

3. Click **OK** to save changes, or **Cancel** to exit without saving the changes.

The requirement types you chose are displayed in the requirement list.

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⚠ **WARNING: YOU MAY ONLY REMOVE REQUIREMENT TYPES ASSIGNED TO A PROJECT IF THE REQUIREMENT TYPE DOES NOT HAVE EXISTING REQUIREMENTS IN THAT PROJECT. OTHERWISE, THE REQUIREMENT TYPE CHECK BOX IS DISABLED.**

THE REQUIREMENT TYPE VIEW

After you have assigned a requirement type to a project you can select it and view the details of the requirement type.

When you select a requirement type, the following tab set is displayed.

- **Description:** A read-only description of the requirement type.

- **Custom Tabs:** A read-only list of the custom tabs assigned to the requirement type and the user-defined attributes assigned to the selected custom tab.

- **Summary:** An editable text field that describes the requirement type for the active project.

ADDING A SUMMARY

The Summary tab provides a text area in which you may document information that may be specific to this requirement type for the project it is assigned to. You can edit this field at any time.

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Chapter 11: Attributes

Attributes are characteristics that help define a requirement. CaliberRM supports both system and user-defined attributes. System attributes are those that CaliberRM automatically assigns to each requirement.

The system attributes that CaliberRM stores for each requirement are priority and status. The user defines the list of values for these system attributes, so you can use the terms that best fit your organization's needs.

User-defined attributes are those you create, define and assign to requirement types. They can be one of several different types of data, including text, integer, date, boolean and users.

SYSTEM ATTRIBUTES

The system attributes that CaliberRM stores for each requirement are **status** and **priority**. Each of these attributes allow you to choose from a list of values. For example, the status list may contain the values "submitted," "accepted" and "rejected." Or you may have levels for priority ranging from 1 to 5, or you may have terms such as "high," "medium" and "low."

Within CaliberRM, you can also set an attribute's default security access (see "Setting the Attribute's Default Security Access" on page 178).

MODIFYING A SYSTEM ATTRIBUTE

⚠ **WARNING: MODIFYING A SYSTEM ATTRIBUTE'S CHARACTERISTICS IN A PROJECT MODIFIES ITS CHARACTERISTICS IN ALL PROJECTS, BUT NOT ITS VALUE.**

To modify a system attribute in CaliberRM:

1.   Select **File > Admin > System Attributes** from the menu.

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The **System Attributes** dialog box is displayed.

The attribute's dialog box is displayed.
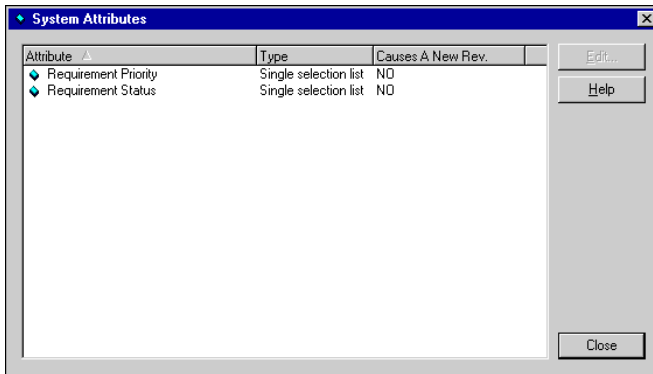
2. Select the attribute you want to edit in the list, and click the **Edit** button.

The attribute's dialog box is displayed.
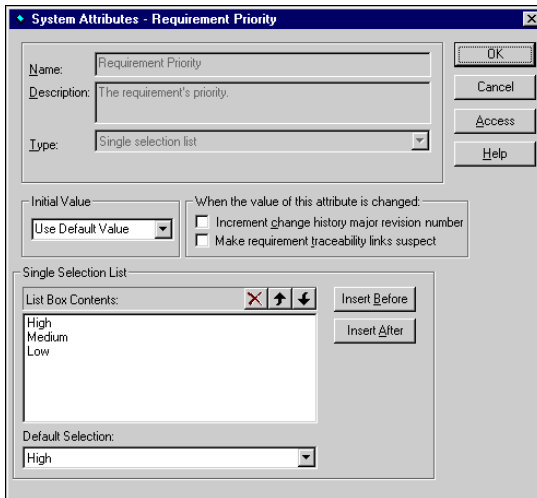
Note: You cannot modify the name, type or description of system attributes.

Setting the Standard Options

Within CaliberRM, you can set certain standard options for the system attributes. The standard options that can be set are:

Initial value: Determines the source of the attribute's initial value: inherit value from the parent requirement, use default value specified, or force user to enter a value.

Increment major revision number: Increments the major revision number in the requirement's change history when a change is made to this attribute (see "Requirement History" on page 218). A check indicates this option is enabled.

Make requirement traceability links suspect: Changes all traceability links for the requirement to suspect links when a change is made to this attribute. A check indicates this option is enabled.

Customizing Values

To customize the values shown in the Single Selection List section of the system attribute's dialog box:

1. To rename a list item, select the item in the list and type in the new name.

   *Note: You may create a new list item by selecting a list item and clicking the **Insert Before** or **Insert After** button.*

2. Repeat Step 1 until you have renamed or created all the list items.

   *Note: To delete a list item, select the item in the list and clicking the **Delete** button.*

3. Order the list items as desired by selecting items and clicking the **Move Up** or **Move Down** button.

4. Select the default list item from the drop-down list.

   Note: To set the default to blank, do not select an item in the drop-down list.

5. Click **OK** to save changes, or **Cancel** to exit without saving changes.

6. Click **Close** in the **System Attributes** dialog box.

USER-DEFINED ATTRIBUTES

A user-defined attribute is one that a user defines and assigns to a requirement type. For example, GUI requirements may contain an attribute called "screen width" while functional requirements may contain an attribute called "response time." Each user-defined attribute contains several standard options that can be set, as well as options defined by the attribute type. The standard options that can be set are listed below.

- **Initial value:** Determines the source of the attribute's initial value: inherit from the parent requirement, use default value specified, or force user to enter a value.

   *Note: If you set to **Force**, a user must have security access to modify this attribute or he or she cannot create new requirements of this type.*

- **Increment major revision number:** Increments the major revision number in the requirement's change history when a change is made to this attribute. See "Requirement History" on page 218. A check indicates this option is enabled.

- **Make requirement traceability links suspect:** Changes all traceability links for the requirement to suspect links when a change is made to this attribute. A check indicates this option is enabled.

Attribute Types

User-defined attributes can be one of 13 different types of data and are listed in the table below.

Attribute Type	Description
Boolean	A check box that allows true (checked) or false (cleared) values only.
Date	An edit box that accepts dates. All dates are formatted with a 4-digit year.
Duration	A spin box that allows you to choose from a range of values. The duration time span (days, weeks, etc.) is displayed to the right of the spin box.
Float	An edit box that can accept any number value. Numbers are rounded to three decimal places.
Integer	An edit box that accepts only integer values. Values can range from -2,147,483,648 to 2,147,483,647.
Multiple selection list	A list box that displays a list of items to choose from, where multiple items can be selected.
Multiple selection group list	A list box that displays a list of groups to choose from, where multiple items can be selected. With this attribute comes the option to limit the number of groups chosen, and the option to allow selection from all groups, or only those assigned to the list.

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Attribute Type	Description
Multiple selection user list	A list box that displays a list of users to choose from where multiple items can be selected. With this attribute comes the option to limit the number of users chosen, and the option to allow selection from all users, or only those assigned to the list.
Multiple line text field	An edit box that displays 1 or more lines and can accept a maximum of 10,000 characters.
Single selection list	A drop-down list that allows you to choose a single selection from the list.
Single text line	An edit box that can accept a maximum of 128 characters.
Single selection group list	A drop-down list that allows you to choose a single group from the list. With this attribute comes the option to allow selection from all groups, or only those assigned to the list.
Single selection user list	A drop-down list that allows you to choose a single user from the list. With this attribute comes the option to allow selection from all users, or only those assigned to the list.

CREATING AN ATTRIBUTE

There are two ways to create user-defined attributes: using the Attribute Creation Wizard or using Expert Mode. Expert Mode uses the dialog boxes to create attributes and is for those who are familiar with defining attribute information.

ATTRIBUTE CREATION WIZARD

There are five steps to creating an attribute through the Attribute Creation Wizard. The wizard launches automatically when you select **File > Admin > User Defined Attributes** and click the **New** button, if you have selected the Wizard option in CaliberRM Options. Select **Tools > Options > Wizards** to verify the wizard is selected.

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To create a user-defined attribute using the Attribute Creation Wizard:

1. Select **File > Admin > User Defined Attributes** from the menu. The **User-Defined Attributes** dialog box is displayed.

2. Click the **New** button. Step 1 of the Attribute Creation Wizard is displayed.
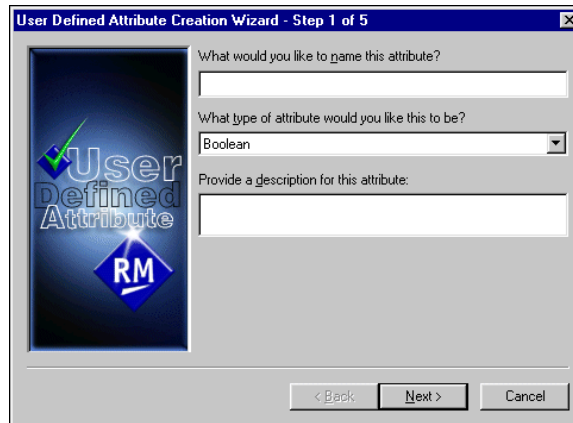
3. Enter a unique name for the attribute.

   Note: *User-defined attributes that have names identical to CaliberRM keywords cannot be used in a document. To avoid conflicts, the CaliberRM keywords should not be used as attribute names. See page 343 for CaliberRM keywords.*

4. Select the type for the attribute. See "Attribute Types" on page 159 for attribute type descriptions.

5. Enter a description for the attribute.

6. Click **Next**.

Step 2 of the Attribute Creation Wizard is displayed. The options displayed at this step depend upon the attribute type you selected in Step 4.
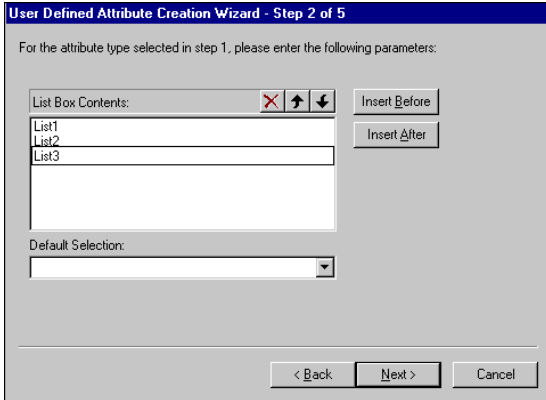
7. For the selected attribute type, enter the parameters shown on the screen.

8. Click **Next**. Step 3 of the Attribute Creation Wizard is displayed.

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9. Choose the appropriate method for obtaining the attribute's initial value: inherit from parent requirement, use default value specified, or force user to enter a value.

10. Click **Next**. Step 4 of the Attribute Creation Wizard is displayed.
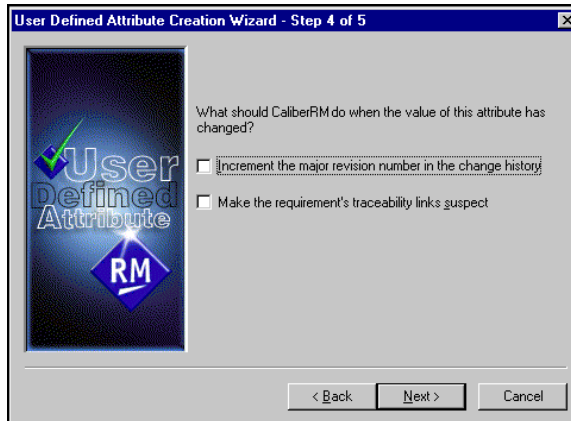
11. If you want a change to the attribute to increment the major revision number in the change history, select the appropriate check box.

12. If you want a change to the attribute to make the requirement's traceability links suspect, select the appropriate check box.

13. Click **Next**.

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Step 5 of the Attribute Creation Wizard is displayed.
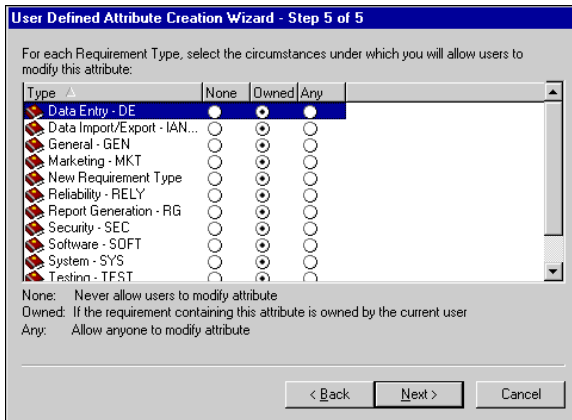
14. Select the option button for the appropriate attribute modification level. This
    determines whether or not users can modify the attribute in requirements of that
    type.

    • **None:** Allows no modification to attributes of the requirement type.

    • **Owned:** Only allows modification to the attributes the user owns for that
      requirement type.

    • **Any:** Allows any modification to the attributes for the requirement type.

*Note: You do not have to assign the attribute to a requirement type to change the
modification level for that type.*

15. Click **Next**. The **New Attribute Information** dialog box is displayed.
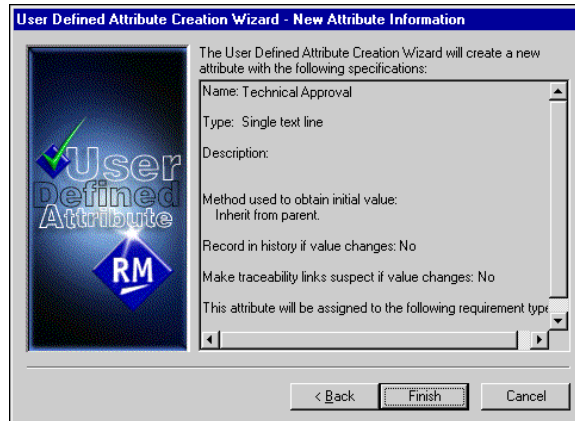
16. Verify that the information you have entered is correct. If not, click the **Back** button and make the necessary changes.

17. Click **Finish**. The attribute is created.

CREATING A USER-DEFINED ATTRIBUTE USING EXPERT MODE

There are four steps to creating a user-defined attribute using Expert Mode: defining the attribute, setting the standard options, setting the attribute type options and setting the attribute's default security access.

*Note: To create a user-defined attribute, the wizards option must be cleared in **Tools > Options > Wizards**.*

Defining the Attribute

To define the attribute:

1. Select **File > Admin > User Defined Attributes** from the menu. The **User Defined Attributes** dialog box is displayed.

2. Click **New**. The **New User-Defined Attributes** dialog box is displayed.
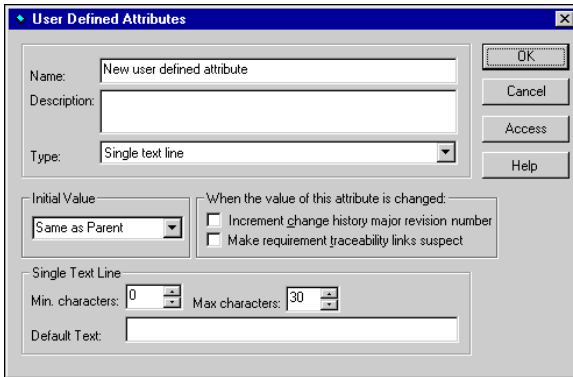
3. Enter a name and description for the attribute.

    Note: User-defined attributes that have names identical to CaliberRM keywords cannot be used in a document. To avoid conflicts, the CaliberRM keywords should not be used as attribute names. See page 343 for CaliberRM keywords.

4. Select the attribute type from the drop-down list (see page 159 for descriptions of the attribute types).

Setting the Standard Options
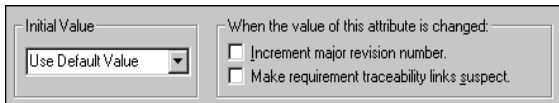
To set the standard options:

1. Determine the source of the attribute's **Initial Value**: inherit from parent requirement, use default value specified, or force user to enter a value.

2. If you want a change to this attribute to increment the major revision number in the requirement's change history, select the **Increment major revision number** check box.

3. If you want a change to this attribute to cause the traceability links to be suspect, select the **Make requirement traceability links suspect** check box.

Setting the Attribute Type Options

Choose the appropriate attribute type from the following sections to finish creating the attribute. Depending on the attribute type selected, the bottom of the **User Defined Attribute** dialog box contains different options.

Boolean

The boolean attribute creates a check box that allows true (checked) and false (cleared) values only.
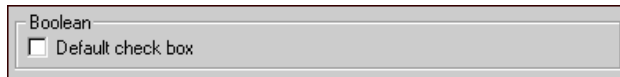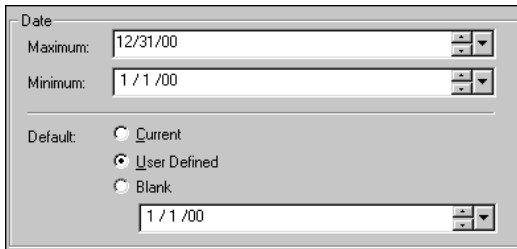
To set the options for this attribute type:

1. If you want the default value to be true, select the **Default** check box. If you want the default value to be false, clear the **Default** check box.

2. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

3. Click **OK** to save changes, or **Cancel** to exit without saving.

Date

The date attribute creates an edit box that accepts dates. All dates are formatted and stored with a 4-character year.
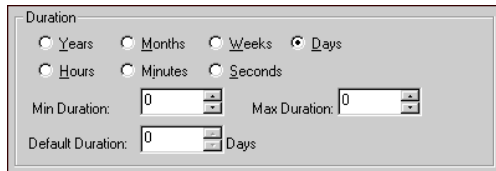
*Note: Date display format is set by selecting **Tools > Options > Appearance** tab. Date can be displayed using Windows long or short date formats.*

To set the options for this attribute type:

1. Enter the latest date you want the user to be able to select in the **Maximum** field.

    Note: CaliberRM stores all year fields as 4 characters.

2. Enter the earliest date you want the user to be able to select in the **Minimum** field.

3. Select the **Default** option you prefer:

    • **Current:** the date the attribute is created

    • **User Defined:** a date specified by the user

    • **Blank:** allows a blank default date

4. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

5. Click **OK** to save changes, or **Cancel** to exit without saving.

Duration

The duration attribute creates a spin box that allows you to choose from a range of values. The duration time span (days, weeks, etc.) is displayed to the right of the spin box.

To set the options for this attribute type:

1. Select the time span you want to use (years, months, weeks, etc.) by selecting the appropriate option button.

2. Enter the minimum duration value.

3. Enter the maximum duration value.

    Note: If you leave the minimum and maximum duration values at "0," there will be no minimum or maximum value.

4. Select the default duration value.

5. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

6. Click **OK** to save changes, or **Cancel** to exit without saving.

Float

The float attribute creates an edit box that accepts any number value, with up to 3 decimal places.
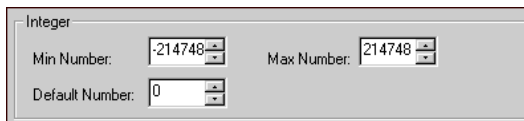
To set the options for this attribute type:

1. Choose the minimum number value.

    Note: CaliberRM rounds decimal values to 3 places.

2. Choose the maximum number value.

3. Choose the default number value.

4. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

5. Click **OK** to save changes, or **Cancel** to exit without saving.

Integer

The integer attribute creates an edit box that accepts only integer values from -2,147,483,648 to 2,147,483,647.

To set the options for this attribute type:

1. Choose the minimum whole number value.

2. Choose the maximum whole number value.

3. Choose the default number value.

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4. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

5. Click **OK** to save changes, or **Cancel** to exit without saving.

Multiple Selection List

The multiple selection list attribute creates a list box displaying a list of items to choose from, with check boxes to mark selection. The order of the attributes in the list also determines the sort order.

Click here to create a new item.

You can also click here.

To set the options for this attribute type:

1. Enter a new list item by clicking on the first blank line in the list box and typing in the name.

    Note: You may rename a list item by selecting the item in the list and typing in the new name.

2. Repeat Step 1 until you have entered all the list items.

    *Note: You may delete a list item by selecting the item in the list and clicking the **Delete** button. If a requirement contains the value list item that you delete, the requirement will retain that value, but you will not be able to apply the value to new or modified requirements.*

3. Order the list items as desired by selecting items and clicking the **Move Up** or **Move Down** button.

4. Select the default item(s) by selecting the box to the left of each item in the **Default Selections** list.

5. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

6. Click **OK** to save changes, or **Cancel** to exit without saving changes.

Multiple Selection Group List

The multiple selection group list attribute creates a list box displaying the list of groups to choose from, with check boxes to mark selection. With this attribute comes the option to limit the number of groups chosen, and the option to allow selection from all groups, or only those assigned to the list.
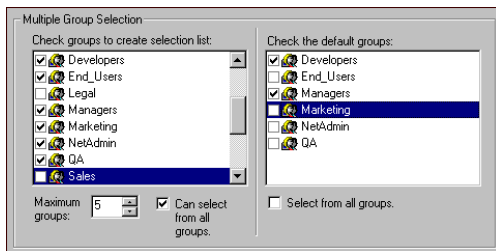
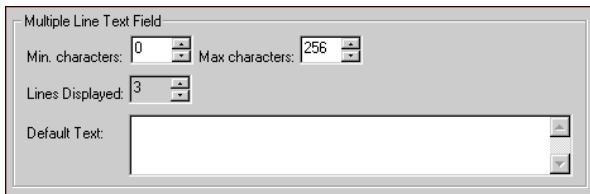
To set the options for this attribute type:

1. In the left list box, select the box to the left of each group you want to include in the selection list.

2. Set the maximum number of groups the user can choose in the **Maximum groups** list box.

3. If you want the user to have the option of choosing from all groups as well as those in the selection list, select the **Can select from all groups** check box.

4. Select the default group(s) in the right list box by selecting the box to the left of each group.

*Note: If you want to select the default group(s) from all groups, and the **Can select from all groups** check box is selected, you can select the **Select from all groups** check box to select any user in any group.*

5. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

6. Click **OK** to save changes, or **Cancel** to exit without saving.

Multiple Selection User List

The multiple selection user list attribute creates a list box displaying a list of users to choose from, with check boxes to mark selection. With this attribute comes the option to limit the number of users chosen, and the option to allow selection from all users, or only those assigned to the list.
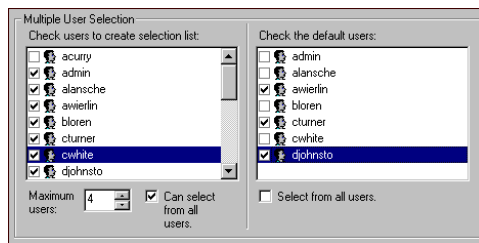
To set the options for this attribute type:

1. In the left list box, select the box to the left of each user you want to include in the selection list.

2. Set the maximum number of users the user can choose in the **Maximum users** list box.

3. If you want the user to have the option of choosing from all users as well as those in the selection list, select the **Can select from all users** check box.

4. Select the default user(s) in the right list box by selecting the box to the left of each user.

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*Note: If you want to select the default user(s) from all users, and the **Can select from all users** check box is selected, you can select the **Select from all users** check box to select any user in any group.*

5. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

6. Click **OK** to save changes, or **Cancel** to exit without saving.

Multiple Line Text Field

The multiple line text field attribute creates an edit box that displays 1 or more lines and can accept a maximum of 10,000 characters.

To set the options for this attribute type:

1. Choose the minimum number of characters.

2. Choose the maximum number of characters.

3. Choose the number of lines to display.

4. Enter the default text or leave blank for no text.

5. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

6. Click **OK** to save changes, or **Cancel** to exit without saving.

Single Selection List

The single selection list attribute creates a drop-down list box that allows you to choose a single selection from the list. The user configures the items in the list. The order of the attributes in the list also determines the sort order.

Click here to create a new item.

You can also click here.

To set the options for this attribute type:

1. Enter a new list item by clicking on the first blank line in the list box and typing in the name.

    Note: You may rename a list item by selecting the item in the list and typing in the new name.

2. Repeat Step 1 until you have entered all the list items.

    *Note: You may delete a list item by selecting the item in the list and clicking the **Delete** button. If a requirement contains the value list item that you delete, the requirement will retain that value, but you will not be able to apply the value to new or modified requirements.*

3. Order the list items as desired by selecting items and clicking the **Move Up** or **Move Down** button.
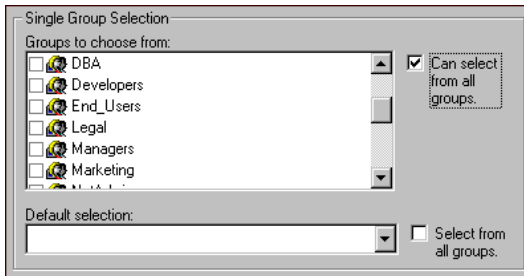
4. Select the default list item from the drop-down list box.

    Note: To set the default to blank, do not select an item in the drop-down list box.

5. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

6. Click **OK** to save changes, or **Cancel** to exit without saving changes.

Single Selection Group List

The single selection group list attribute creates a drop-down list box that allows you to select a single group from the list specified. With this attribute comes the option to allow selection from all groups, or only those assigned to the list.
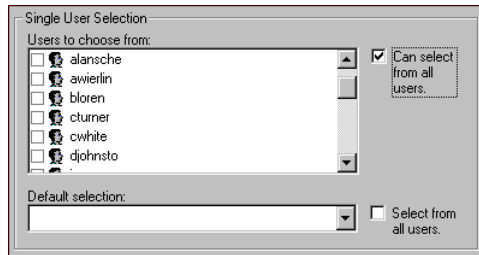

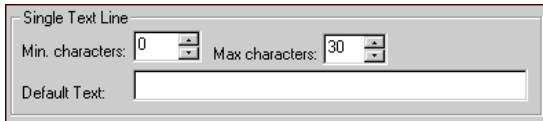*To set the options for this attribute type:*

1. Select the box to the left of each group you want to include in the selection list.

2. If you want the user to have the option of choosing from all groups as well as those in the selection list, select the **Can select from all groups** check box.

3. Select the default group from the drop-down list box.

   Note: If you want to select the default group from all groups, and the Can select from all groups check box is selected, you can select the Select from all groups check box.

4. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

5. Click **OK** to save changes, or **Cancel** to exit without saving.

Single Selection User List

The single selection user list attribute creates a drop-down list box that allows you to select a single user from the list specified. With this attribute comes the option to allow selection from all users, or only those assigned to the list.

To set the options for this attribute type:

1. Select the box to the left of each user you want to include in the selection list.

2. If you want the user to have the option of choosing from all users, as well as those in the selection list, select the **Can select from all users** check box.

3. Select the default user from the drop-down list box.

   *Note: If you want to select the default user from all users, and the **Can select from all users** check box is selected, you can select the **Select from all users** check box.*

4. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

5. Click **OK** to save changes, or **Cancel** to exit without saving.

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Single Text Line

The single text line attribute creates an edit box that can accept a maximum of 128 characters.

To set the options for this attribute type:

1. Choose the minimum number of characters.

2. Choose the maximum number of characters.

3. Enter the default text, or leave blank for no text.

4. You can now set the attribute's access. See "Setting the Attribute's Default Security Access" on page 178.

5. Click **OK** to save changes, or **Cancel** to exit without saving.

Setting the Attribute's Default Security Access

When you create a new attribute, you can set its default security access. This access determines whether users can modify the attribute in each requirement type. For more information on security and security profiles, see "Security" on page 89.

To set the attribute's default access:

1. Within the attribute's dialog box, click the **Access** button.

The **Attribute Access** dialog box is displayed.
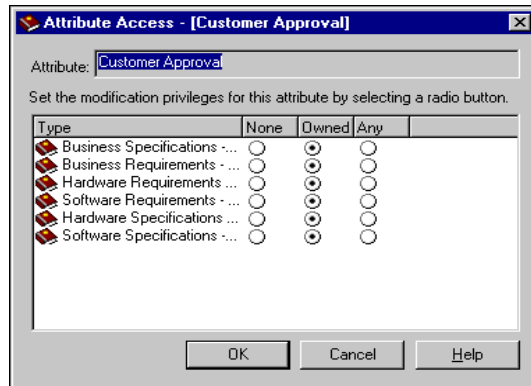
2. Select the option button for the appropriate attribute modification level. This determines whether or not users can modify the attribute in requirements of that type.

   • **None:** Allows no modification to attributes of the requirement type.

   • **Owned:** Only allows modification to the attributes the user owns for that requirement type.

   • **Any:** Allows any modification to the attributes for the requirement type.

   Note: You do not have to assign an attribute to a requirement type to change the modification level for that requirement type.

3. Repeat Step 2 for the remaining requirement types.

4. Click **OK** to save changes, or **Cancel** to exit without saving.

MODIFYING A USER-DEFINED ATTRIBUTE

⚠ **WARNING: MODIFYING A USER-DEFINED ATTRIBUTE'S CHARACTERISTICS IN A PROJECT MODIFIES ITS CHARACTERISTICS IN ALL PROJECTS, BUT NOT ITS VALUE.**

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To modify a user-defined attribute:

1. Select **File > Admin > User Defined Attributes** from the menu. The **User Defined Attributes** dialog box is displayed.
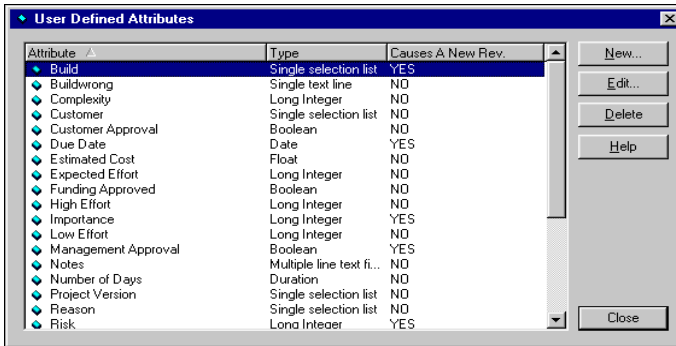
2. Select the attribute you want to edit from the list and click the **Edit** button. The attribute's dialog box is displayed.
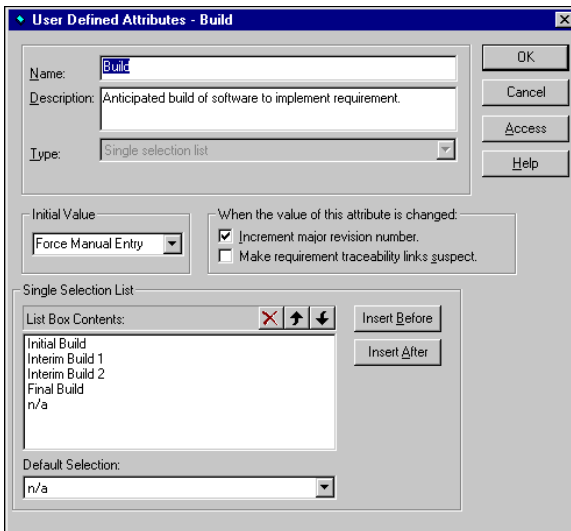
Note: The options at the bottom of the dialog box depend upon the attribute type you select in Step 2.

3. Edit the options you want to modify.

    Note: To prevent loss of data, the attribute type cannot be modified once the attribute is saved.

4. Click **OK** to save changes, or **Cancel** to exit without saving changes.

USER-DEFINED ATTRIBUTE ORDERING

Once you have created your user-defined attributes, you can arrange them in the order you want them to appear.

Note: You must have CaliberRM Administrator privileges to arrange user-defined attribute order.

To arrange your user-defined attributes:

1. Select **File > Admin > Requirement Types**.

2. Select the requirement type whose user-defined attribute you want to arrange.

3. Click **Edit**. The requirement type window is displayed.

4. Select the custom tab where the attributes you want to arrange are located.

5. Click **Edit**. The **Edit Custom Tab** window is displayed.

6. Select the attribute you wish to move in the selected list.

7. Use the **Move Up** or **Move Down** button to move the attribute higher or lower in the list.

8. Click **OK** to save the order.

DELETING A USER-DEFINED ATTRIBUTE

WARNING: DELETING A USER-DEFINED ATTRIBUTE IN A PROJECT DELETES IT IN ALL PROJECTS! BEFORE YOU CAN DELETE A USER-DEFINED

ATTRIBUTE, YOU MUST REMOVE IT FROM ALL CUSTOM TABS IN ALL REQUIREMENT TYPES IN WHICH IT APPEARS.

THIS IS A RESOURCE INTENSIVE OPERATION IF THERE ARE MANY REQUIREMENTS IN THE TYPE WHERE AN ATTRIBUTE IS BEING CHANGED. THIS SHOULD NOT BE DONE ON AN ACTIVE SYSTEM AS USERS MAY BE AFFECTED.

To delete a user-defined attribute:

1. Select **File > Admin > User Defined Attributes** from the menu. The **User Defined Attributes** dialog box is displayed.

2. Select the attribute you want to delete from the list.

3. Click the **Delete** button. A message is displayed verifying that you want to delete the attribute.

4. Click **Yes** to delete the attribute, or **No** to save it.

5. Click **Close** to close the **User-Defined Attributes** dialog box.

ASSIGNING USER-DEFINED ATTRIBUTES TO A REQUIREMENT TYPE

⚠ WARNING: MODIFYING A REQUIREMENT TYPE IN A PROJECT MODIFIES IT IN ALL PROJECTS.

THIS IS A RESOURCE INTENSIVE OPERATION IF THERE ARE MANY REQUIREMENTS IN THE TYPE WHERE AN ATTRIBUTE IS BEING CHANGED. THIS SHOULD NOT BE DONE ON AN ACTIVE SYSTEM AS USERS MAY BE AFFECTED.

User-defined attributes are assigned to custom tabs in a requirement type.

*To assign user-defined attributes to a requirement type:*

1. Select **File > Admin > Requirement Types** from the menu. The **Requirement Types** dialog box is displayed.

2. Select the requirement type you want to edit.

3. Click the **Edit** button. The requirement type's dialog box is displayed.
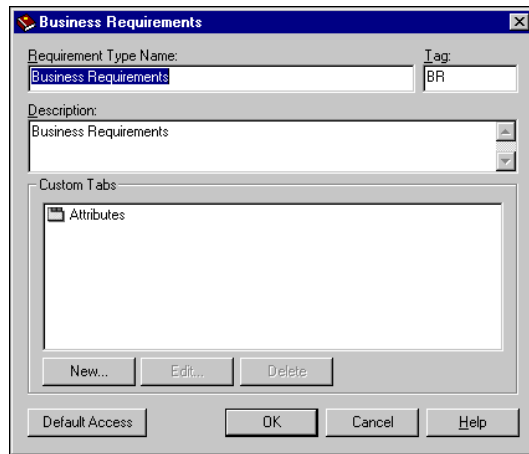
4. Select the custom tab you want to assign the user-defined attribute to and click the **Edit** button.

   The **Edit Custom Tab** dialog box is displayed.
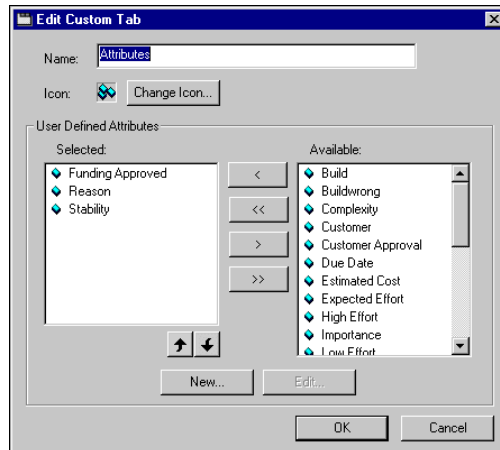
5. Select an attribute from the **Available** list and click the **Move Left** button to move it to the **Selected** list.

   *Note: You can move all attributes at once by clicking the **Move All Left** button.*

   In this database, you can also create a new user-defined attribute by clicking the **New** button. If you want to create a new attribute, see "Creating a User-Defined Attribute Using Expert Mode" on page 165. Once you have created your user-defined attributes, you can arrange them in the order you need them to appear by clicking the **Move Up** or **Move Down** button.

6. Click **OK** to save changes to the custom tab, or **Cancel** to exit without saving changes.

7. Click **OK** in the selected requirement type's dialog box.

Chapter 12: Requirements Manager Overview

OVERVIEW

CaliberRM is the requirement management component that administers projects, requirements and other CaliberRM custom utilities.

Depending on your installation, you will have all or a subset of the following components in your Caliber menu. The table below lists the components in the **Typical** user installation.

Component	Description
CaliberRM	The Requirements Manager
CaliberRM Toolbar	Provides convenience in launching applications
Help Files	Help
Diagnostic Tool	Used in troubleshooting
Document Factory	Generates customized reports
Reporting	Generates various pre-formatted CaliberRM reports
CaliberRM Viewer	Provides a pop-up view of a requirement without opening the full CaliberRM client
Sample Documents	Sample data

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USER INTERFACE

CaliberRM contains three views, each of which allows you to perform specific tasks. The views available are:

• Project View

• Requirement Type View

• Requirement View

When you start CaliberRM for the first time, you are prompted to open a project. Select a project from the list and click **OK**. If you are setting up a new project, you are prompted to select the requirement types to be used in the project. You can also click **Cancel** and select a project later from the project drop-down list. If you have used CaliberRM before, your session opens to the last project you worked on before exiting.

When you select a project, the requirement types and requirements associated with that project are displayed in the project tree.

Project Tree

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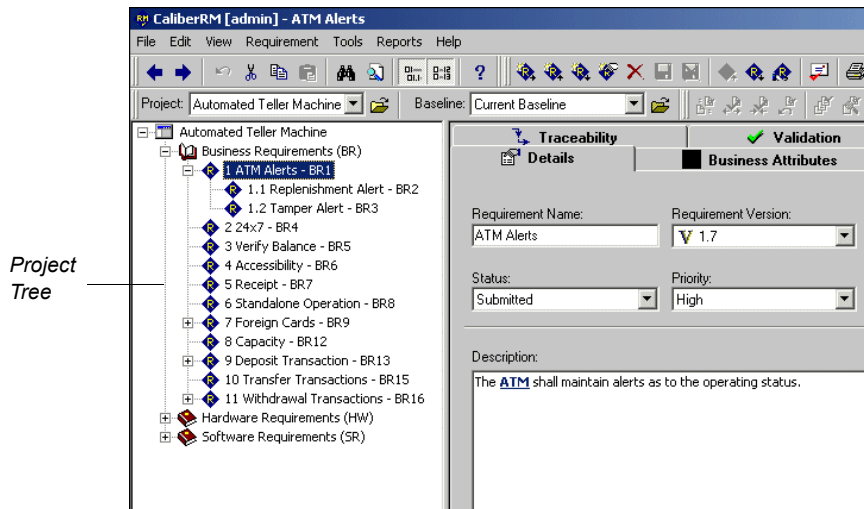
The project tree is a browser-like interface with expandable folders for projects, requirement types and requirements. The tab sets, on the right side of the screen, change depending on what is selected in the tree.

Project View

When you select a project in the tree, the following tab set is displayed:

- **Project Info tab:** Tells you whether security is enabled or disabled and whether shared and mapped requirements are allowed. These fields are read-only unless you have administrator privileges. The description field displays a read-only project description.

- **Discussion tab:** Allows you to post and/or reply to project level discussions. For more information on project level discussions, see "Project Level Discussion" on page 285.

Requirement Type View

When you select a requirement type, the following tab set is displayed.

- **Description:** A read-only description of the requirement type.

- **Custom Tabs:** A read-only list of the custom tabs assigned to the requirement type and the user-defined attributes assigned to the selected custom tab.

- **Summary:** An editable text field that describes the requirement type for the active project.

Note: You must have CaliberRM administrator privileges to edit the Summary tab text.

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Requirement View

When you select a requirement, there are seven system requirement tabs used to manage and store requirement data. The information contained on each tab is discussed in the chapter "Requirements" on page 211. There may also be user-defined tabs that are set up by your CaliberRM administrator when requirement types are created.

- Details Tab
- Validation Tab
- Responsibilities Tab
- References Tab
- Discussion Tab
- Traceability Tab
- History Tab

MENUS

In CaliberRM, there are seven menus: File, Edit, View, Requirement, Tools, Report and Help. Each menu contains items that enable you to perform certain functions. The menus are described in more detail in the following sections.

File Menu

The **File** menu contains several commands related to project level and administrative tasks. The File menu is shown on the following page.

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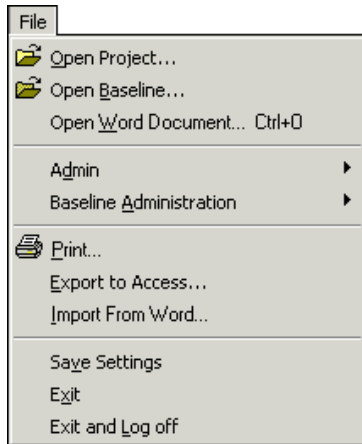
The commands perform the following functions:

- **Open Project:** Displays the **Project** dialog box, which allows you to choose from a list of projects.

- **Open Baseline:** Displays the baselines available for this project and allows you to select a baseline.

- **Open Word Document:** Opens an existing Word document and allows you to create new requirements and reference links from within the document.

- **Admin:** Displays the **Admin** sub-menu, which contains commands for performing administrative tasks. See "CaliberRM Administrators" on page 129.

  - **User Defined Attributes:** Displays the **User Defined Attributes** dialog box, which allows you to create, modify and delete user-defined attributes.

  - **System Attributes:** Displays the **System Attributes** dialog box, which allows you to modify system attributes.

- **Requirement Types:** Displays the **Requirement Types** dialog box, which allows you to create, modify and delete requirement types and custom tabs within requirement types.

- **Security Profiles:** Displays the **Security Profiles** dialog box, which allows you to create, modify and delete security profiles.

- **Set Requirement Types:** Displays the **Set Requirement Types** dialog box, which allows you to specify which requirement types are used in the current project.

- **CaliberRM Administrators:** Displays the **Administrators** dialog box, which allows administrators to specify which users have administrative privileges within CaliberRM. **This setting applies to all projects.**

- **Baseline Administration:** Displays the Baseline Administration sub-menu, which contains commands for performing baseline management.

  - **New Baseline:** Displays the **New Baseline** dialog box, which allows you to create a new baseline if you are a baseline administrator.

  - **Baseline Properties**: Displays the **Baseline Properties** dialog box when a baseline is in use. If you do not have baseline administration privileges, the information displayed is read-only.

  - **Baseline Maintenance:** Displays the **Baseline Maintenance** window for adding or deleting requirement information in a baseline if you are a baseline administrator.

- **Print:** Prints a detailed report for the selected requirement.

- **Export to Access:** Exports data the user selects for the selected project to Microsoft Access.

- **Import from Word:** Displays the **Import from Word** Wizard, which allows you to select a Word document from which to import requirements into CaliberRM.

- **Save Settings:** Saves the CaliberRM settings to ensure your settings are the same the next time you open your CaliberRM project.

- **Exit**: Closes CaliberRM.

- **Exit and Log Off:** Closes CaliberRM and logs you off of the CaliberRM system. Also closes the Framework Administrator if it is running.

Edit Menu

The **Edit** menu contains several standard commands, including Cut, Copy and Paste.
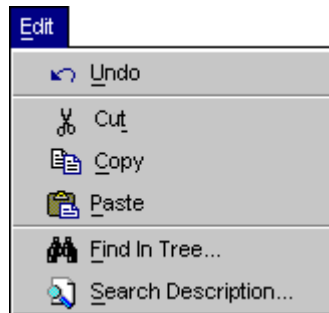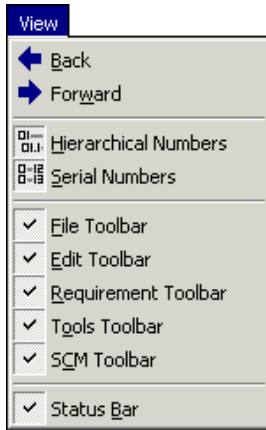

The commands perform the following functions:

- **Undo:** Reverses the previous action performed.

- **Cut:** Cuts the selected text or requirement.

- **Copy:** Copies the selected text or requirement.

- **Paste:** Pastes cut or copied items in the location specified.

- **Find in Tree:** Enables you to find requirements in the requirement list whose names meet specified criteria. For more information on this feature, see page 225.

- **Search:** Enables you to search all requirements in a project, requirement type or sub-tree for a matching string in the requirement description. For more information on this feature, see page 226.

View Menu

The **View** menu provides access to additional views of the requirement data and allows you to view and hide toolbars.

The commands perform the following functions:

- **Back/Forward:** Allows you to navigate between previously viewed requirements.

- **Hierarchical Numbers:** Displays the hierarchical numbering scheme in the requirement list.

- **Serial Numbers:** Displays the unique identification number for each requirement in the requirement list.

- **File Toolbar:** Shows/hides the File toolbar. The File toolbar contains the Project and Baseline drop-down lists. A check mark indicates that the toolbar is displayed.

- **Edit Toolbar:** Shows/hides the Edit toolbar. The Edit toolbar contains the following options: Undo, Cut, Copy, Paste, Find in Tree, Search Description, Hierarchical Numbers, Serial Numbers and About CaliberRM. A check mark indicates that the toolbar is displayed.

- **Requirement Toolbar:** Shows/hides the Requirement toolbar. The Requirement toolbar contains the following options: Create Requirement, Insert Before, Insert After, Drag and Drop New Requirement, Delete Requirement, Save Changes, Cancel Changes, Move Up, Move Down, Map/Unmap Requirement, Registered Interest and Print. A check mark indicates that the toolbar is displayed.

- **Tools Toolbar:** Shows/hides the Tools toolbar. The Tools toolbar contains the following options: Document Factory, Glossary, Requirement Grid, Traceability Matrix, Unread Discussions and any custom tools you create. A check mark indicates that the toolbar is displayed.

- **SCM Toolbar:** Shows/ hides the SCM toolbar. The SCM toolbar contains options for using an SCM tool, if installed. A check mark indicates that the toolbar is displayed.

- **Status Bar:** Shows/hides the Status bar. A check mark indicates that the toolbar is displayed.

Requirement Menu

The **Requiremen**t menu contains several items related to requirement creation and maintenance. This menu also allows you to change the order of requirements in the tree.

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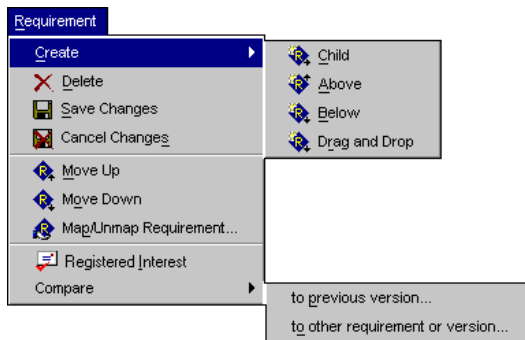
- **Create Requirement:** Displays the **Create Requirement** sub-menu, which contains commands for creating new requirements.

  - **Child:** Creates a new requirement as a child of the requirement or requirement type currently selected.

  - **Above:** Creates a new requirement before and at the same hierarchical level as the currently selected requirement.

  - **Below:** Creates a new requirement after and at the same hierarchical level as the currently selected requirement.

  - **Drag and Drop:** Allows you to drag and drop a new requirement to any level in the selected project.

- **Delete Requirement:** Allows you to delete unwanted requirements.

- **Save Changes:** Allows you to save any changes you have made to a requirement, requirement type, or user-defined attribute.

- **Cancel Changes:** Allows you to cancel any changes you have made to a requirement, requirement type or user-defined attribute before you save those changes.

- **Move Up:** Changes the order of the requirements by moving the selected requirement up.

- **Move Down:** Changes the order of the requirements by moving the selected requirement down.

- **Map/Unmap Requirement:** Allows you to link or unlink a requirement description to or from another requirement's description.

- **Registered Interest:** Allows you to be notified of any changes that are made to a requirement even if you are not assigned to the requirement.

- **Compare Requirement:** Allows you to compare any requirement to another requirement or requirement version.

  - **to previous version:** Allows you to compare a requirement to a previous version of the same requirement.

  - **to other requirement or version:** Allows you to compare a requirement to any version of another requirement.

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Tools Menu

The Tools menu allows you to view the Requirement Grid, Traceability Diagram and Traceability Matrix. You are also able to access the Document Factory, Glossary, SCM commands, Test Wizard, Compare Baselines, Baseline Signatures and Unread Discussions., as well as set system options using the **Options** menu item.
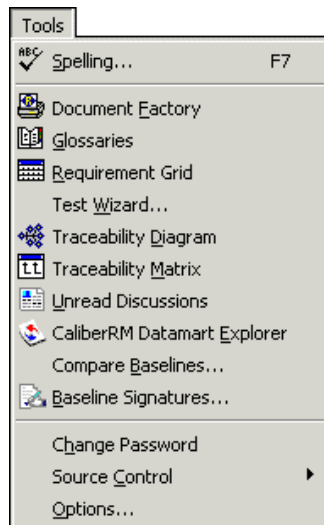
The commands under the **Tools** menu perform the following functions:

- **Spelling:** Displays the **Spelling** dialog box, which allows you to check the spelling of a requirement definition.

- **Document Factory:** Launches the Caliber Document Factory, which allows you to generate any type of up-to-date, customized specifications documents using Microsoft Word templates.

- **Glossaries:** Displays the global glossary in which you can view the definition of a term in the glossary by right-clicking on it in the requirement description.

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- **Requirement Grid:** Displays the Requirement Grid, which shows all the requirements in a filterable list.

- **Test Wizard:** Launches the Test Wizard, which allows you to create tests for a requirement. This provides an easy way to create tests from all of your requirements by automating the process of creating tests in TestDirector.

- **Traceability Diagram:** Displays the traceability data for one requirement in a diagram.

- **Traceability Matrix:** Displays the Traceability Matrix, which shows all requirement relationships.

- **Unread Discussions:** Displays the Unread Discussion List, which shows all unread discussions for the open project.

- **CaliberRM Datamart Explorer:** Launches CaliberRM Datamart Explorer, if installed, which allows you to build advanced queries and analyses of project requirements.

- **Compare Baselines:** Displays the **Compare Baselines** dialog box.

- **Baseline Signatures:** Displays the **Baseline Signatures** dialog box.

- **Change Password:** Displays the **Change Password** dialog box.

- **Source Control:** Displays the **Source Control** sub-menu, that contains options for using an SCM tool, if installed.

- **Options:** Displays the **CaliberRM Options** dialog box, which allows you to set system options for your CaliberRM client. See page 200 for details on CaliberRM Options.

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Changing Your Password

CaliberRM enables administrators to create and enforce user password policies. As a result, you may receive messages from CaliberRM about your password. The following table lists the password related messages.

Message	Action
Your CaliberRM logon password has expired. Please choose a new password.	Click OK and enter new password information in **Change Password** dialog box.
Your CaliberRM logon password will expire in *n* days. Do you want to change it now?	Yes - Enter new password in **Change Password** dialog box.
Your CaliberRM logon password has to be changed in order to logon. Please change your password.	Change your password.
Your CaliberRM account has been disabled. Please contact your CaliberRM Administrator for more information.	Contact Administrator.

If you have change password privileges, you can change your password at any time as long as your current password has met the imposed minimum password age, and your new password conforms to the password restrictions.

To change your password:

1. Select **Tools > Change Password.** The **Change Password** dialog box is displayed.

2. Enter your current password in the **Old Password** field.

3. Enter a new password in the **New Password** field.

4. Verify the new password by retyping it in the **Retype New Password** field. If the two passwords do not match, you are prompted to re-enter them.

5. Click **OK**.

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If the password you are attempting to use fails to meet the imposed criteria, or if you are not allowed to change your password, you will receive one of the following messages:

Message	Meaning/Action
You have entered either a duplicate or old password.	You have attempted to reuse an old password. Choose a different password.
The password you entered is too short.	You have attempted to change your password to one that is too short. Choose a longer password.
The minimum password age has not been met. You will not be able to change your password now.	Your password is too young to change.
You do not have permission to change your password. Please contact your CaliberRM administrator.	You cannot change your own password due to security settings.

Report Menu

The report menu allows you to preview and print standard reports of the requirement data. For instructions on printing reports, see "Reports" on page 271.

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The commands perform the following functions:

- **Detail:** Prints the Detail Report, which lists all requirements in the project with their data, including name, description, priority, status, owner and user-defined attributes.

- **History:** Prints the History Report, which lists all requirements with their change history.

- **Discussion:** Prints the Discussion Report, which lists all requirements with their group discussion messages.

- **Status:** Prints the Requirement by Status report, that lists all requirements by their status.

- **Responsibility:** Prints the Requirements by Responsibility report, which lists all requirements in the project sorted by the responsible user.

- **Specification:** Generates a requirement specification report in Microsoft Word format.

Help Menu

The Help menu displays options for accessing the Help system.
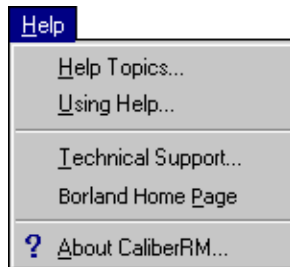
The commands perform the following functions:

- **Help Topics:** Displays the Help system.

- **Using Help:** Displays instructions for using the Help system.

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- **Technical Support:** Displays information about contacting Borland's Technical Support team.
- **Borland:** Opens an Internet browser and displays the Borland home page.
- **About CaliberRM:** Displays information about CaliberRM.

CALIBERRM OPTIONS

Under the **Tools** menu, CaliberRM has several system options that you can set for your client. The options are listed by tab order in the following sections.

General Tab

Option	Description
Save settings on exit	Saves system settings, including last item selected, window size and window position, when exiting CaliberRM.
Show unread discussion list on start	Shows the Unread Discussion List upon launching CaliberRM.
Mark reference documents as "read only" after saving	Helps prevent others from modifying referenced documents outside the CaliberRM user interface.
Confirm before saving	Displays a confirmation dialog box asking if you want to save the requirement you have modified when you select a new item. This option is selected by default.
Ask for comment when saving requirement	Displays the Comment dialog box when you save changes to a requirement.
Show reference-related messages	Displays a dialog box every time you create or remove references to text within a document.

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Option	Description
Single-click on selected requirement initiates rename	Determines whether or not you can rename a requirement in the list by selecting it and then single-clicking on it, as in Windows Explorer.
Automatically detect CaliberRM upgrades on startup	Allows users immediate access to available CaliberRM upgrades, and provides a URL location for accessing the downloads.

Hide Tabs Tab

Allows you to hide or display tabs for specific requirement types by selecting the box to the left of the tab for each requirement type on the tab. A check indicates the tab is displayed. Tabs hidden in a requirement type are hidden in all projects that use that requirement type.

Appearance Tab

The options on this tab allow you to set the appearance of the following areas of CaliberRM.

Option	Description
Flat Toolbars	Displays the toolbar option buttons as flat, instead of raised.
Icons on Menus	Shows icons next to commands on the menus. This helps you recognize the toolbar buttons.
Resize Windows While Moving Splitter Bar	Redraws the tabs on the right side of the screen dynamically when you move the screen splitter. This may cause some minor flickering on your screen while redrawing, depending on your computer's configuration.

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Option	Description
Multiline Tabs	Allows you to stack your requirement tabs so they are all visible in the CaliberRM window.
Highlight glossary terms in requirement description	Allows you to turn the glossary feature on or off.
Date Format	Determines how dates are displayed, in Windows Long or Windows Short format.
Tab Options	Allows you to set the way your tabs are displayed.

Communications Tab

This tab allows you to set the following options.

Option	Description
Normal Transaction Time-out	Determines how long, in seconds, the client waits for a response from the server for normal transactions, such as displaying project data. If you are running CaliberRM over a modem or slow connection, you may need to increase this time.
Lengthy Operation Time-out	Determines how long, in seconds, the client waits for a response from the server for lengthy operations, such as running reports. The time needed to build reports depends upon the report selected and the amount of data to be compiled.
Network Diagnostics Level	Determines the level of detail presented when you run the network diagnostics utility. This utility can be used to troubleshoot communication problems. This option should only be changed at the discretion of Borland's product support group.

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Clipboard Tab

This tab determines what data is pasted to the clipboard based on the following options.

Option	Description
Paste Only the Copied Requirement	Pastes only the requirement that was copied.
Paste the Copied Requirement & all Child Requirements	Pastes the copied requirement and all of its child requirements.
Allow User to Override Default Behavior	Allows the user to override the default paste behavior specified. If you choose this option, you will always be asked if you want to paste child requirements even when pasting a requirement that has no child requirements.
Choose directory	Specifies the directory in which to place a dragged requirement (.crm file).

Wizards Tab

This tab allows you to determine whether requirement types and user-defined attributes are created using the appropriate wizard.

Option	Description
Requirement Types	Determines if requirement types are created using the Requirement Type Creation Wizard or manually.
User-Defined Attributes	Determines if user-defined attributes are created using the Attribute Creation Wizard or manually.

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Spelling Tab

This tab allows you to set options regarding the Spelling Checker. A check in the box indicates the Spell Checker option is enabled. See page 208 for more information about using the Spell Checker.

Option	Description
Always suggest replacements for misspelled words	If selected, the spell checker displays suggested corrections for misspelled words.
Always check spelling before saving Requirements	If selected, the spell checker checks for misspelled words when a requirement is saved after any modification.
Check spelling only if Requirement description modified	If selected, the spell checker checks for misspelled words when a requirement is saved, but only if the description field has been modified.
Ignore words in UPPERCASE	If selected, the spell checker ignores words using all uppercase letters.
Ignore words with numbers	If selected, the spell checker ignores the spelling of words that contain numbers.
Ignore CaliberRM glossary words	If selected, the spell checker ignores all words that are contained in the CaliberRM glossary.
Dictionary options	By selecting the Edit button, you may add, change, or remove words from your custom dictionary.
International dictionaries	Displays a drop-down list of all dictionaries installed on your system. Select a language to use when spelling is checked. The items in this list should be spelled exactly as they are in the Available Dictionaries section.

Using Spell Checker

The CaliberRM Spell Checker allows you to check the spelling of a requirement description in CaliberRM.

There are four methods available for invoking the Spell Checker:

- Select **Tools > Options > Spelling** to set the option to automatically check spelling upon saving the requirement. The Spell Checker automatically checks spelling when you click the **Save** button or select **File > Save Settings** from the menu.

- Press the F7 function key.

- Click the **Spelling** button on the CaliberRM toolbar.

- Select **Tools > Spelling** from the menu.

When Spell Checker is invoked, the **Spelling** dialog box is displayed.
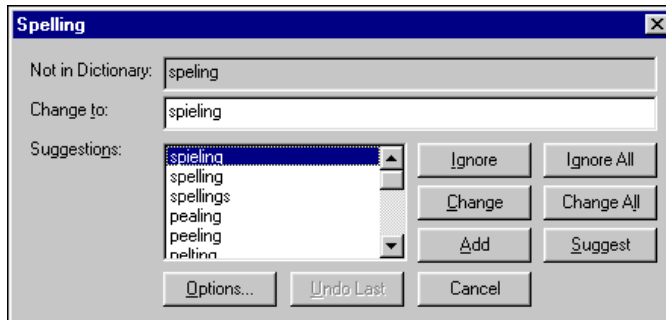
Spelling Checker Options

Not in Dictionary: Displays the misspelled word.

Change to: Displays the first word in the **Suggestions** list, or allows you to type in a replacement word.

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Suggestions: Displays a list of suggested replacements for the misspelled word.

Ignore: Click this button to ignore the misspelled word.

Ignore All: Click this button to ignore all instances of the misspelled word.

Change: Click this button to replace the misspelled word with the word in the **Change to** field.

Change All: Click this button to replace all instances of the misspelled word with the word in the **Change to** field.

Add: Click this button to add the word in the **Not in Dictionary** field to the Custom Dictionary.

Suggest: Click this button to populate the **Suggestions** list with alternatives to the word in the **Change to** text field.

Options: Click this button to display the **Dictionary Options** dialog box.

Undo Last: Click this button to reverse the last change made by the Spell Checker.

Cancel Button: Click this button to close the **Spelling** dialog box without making any changes.

Dictionary Options

CaliberRM enables you to create a custom dictionary of words. You may add, edit, or remove words from your custom dictionary.

To add a word to the Custom Dictionary:

1. Click the **Options** button in the **Spelling** dialog box. The **Spelling** tab is displayed.

2. Click **Edit**. The **Custom Dictionary** dialog box is displayed.

*Click the **New** button.*
Type new word here.
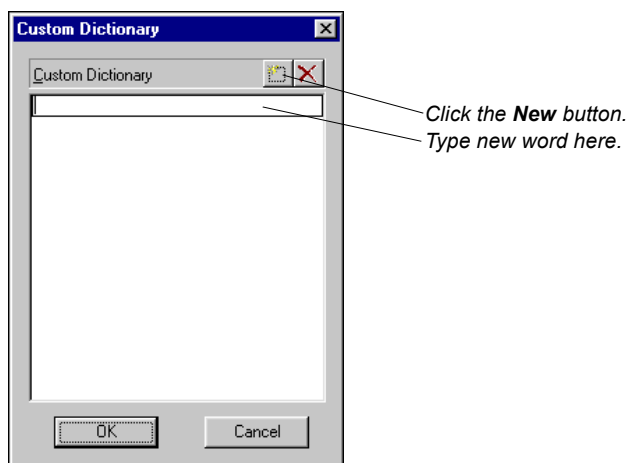
3. Click the **New** button to add a word. A space is created for the new word.

4. Type in the word you want to add to the dictionary and click **OK**.

   *Note: To edit a word in the list, double-click it and make changes. To delete a word, select it and click the **Delete** button.*

Cache Tab

Management of cache on CaliberRM allows the user to set limits on how much memory is consumed by the cache data. The cache is used to keep local copies of frequently accessed requirements. You may set one of the following to manage the cache on your client.

Option	Description
Unlimited	Allows CaliberRM to be limited only by available memory. This is the default setting.

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Option	Description
Never Cache	Causes CaliberRM to access the server for each request for data. This setting minimizes memory requirements for the CaliberRM client at the expense of increased network traffic.
Custom	Allows you to limit the amount of cache that CaliberRM utilizes on your computer.

Custom Tools Tab

Allows you to create custom tools specific to your CaliberRM project. Custom tools can be created, assigned an icon you select and placed at a specific location on the CaliberRM toolbar for accessibility.

Creating Custom Tools

To create a Custom Tool in CaliberRM:

1. Select **Tools > Options** from the menu.

2. Click the **Custom Tools** tab.

3. In the **Menu Contents** section, click the **New** button.

4. Type in the name you want to give your custom tool.

5. Type in the command, executable or document name you want your custom tool to execute, in the **Command or Document** section, or click the **Browse** button to locate the executable.

6. Type in any arguments you want to place on your command in the **Arguments** section.

7. Type in the directory from which you want your command to run in the **Initial Directory** section, or click the **Browse** button to locate the directory.

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8. Select the **Prompt for arguments** check box if you want your custom tool to prompt for the arguments you may have assigned in Step 6.Specify for which objects (projects, requirement types or requirements) the custom tool will be available in the **Tool Enabled** section. A check next to the object indicates the tool is enabled.

9. Click the **Change Icon** button if you want to assign or change an icon for your custom tool.

10. Click **OK.**

The new custom tool icon is now displayed in the Tools toolbar.

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Chapter 13: Requirements

Requirements are specifications that the application or system you are building must meet. Requirements can originate from many sources such as business rules, business process models, product marketing, prototypes, development meetings and more.

Before you can create requirements in CaliberRM, your CaliberRM administrator must first create a project in the Framework Administrator, and create requirement types in CaliberRM. Requirements are grouped according to their type.

Each requirement within a project has two numbers associated with it. One is the hierarchical number, which is determined by the requirement's placement within the project tree or hierarchy. The hierarchical number changes as requirements are added, moved or deleted. The other number is its unique ID (or serial) number. The serial number does not change, regardless of the requirement's position, and it is not reused if the requirement is deleted.

In CaliberRM, you have the option of displaying multiple views of your requirement data. One view is the Requirement Grid, which shows all requirements and their attributes in a filterable grid. See "Requirement Grid" on page 231 for more information on the grid. Another view is the Traceability Matrix, which shows how requirements are linked together. See "The Traceability Matrix" on page 263 for more information on the matrix. You can also use the Trace Diagram to view requirement information. See "The Traceability Diagram" on page 259 for more information on the diagram.

CREATING A REQUIREMENT

There are three steps necessary to create a requirement:

- Defining requirement information

- Assigning attribute values

- Assigning responsible users

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In addition, there are three optional steps: linking reference documents, creating traceability links and defining the validation procedure.

CaliberRM enforces security while creating a new requirement, so you are not able to modify fields that your security profile does not allow. Only fields that are enabled are available for you to change.

Defining the Requirement

When you create a requirement, you have four options for the placement of the new requirement. The menu option you select or the button you click determines the placement:

Create Requirement: Creates a new requirement as a child of the currently selected requirement.

Insert Above: Creates a new requirement at the same hierarchical level and before the currently selected requirement.

Insert Below: Creates a new requirement at the same hierarchical level and after the currently selected requirement.

Drag-and-Drop New Requirement: Creates a new requirement anywhere in the tree (that you have permission to create requirements) by allowing you to "drop" the requirement in place.

To create a requirement and define the requirement information:

1. Click the **Drag-and-Drop New Requiremen**t button and click in the requirement list in the location you would like to insert the requirement.

    Note: The cursor is displayed as a circle with a bar through it if the cursor is over an area where you cannot create a requirement.

    OR

    Select a requirement near where you want to create the new requirement and select the appropriate option for creating a requirement from the Requirement menu (Child, Above or Below), or click the appropriate Create Requirement button.

    The new requirement is created, and the **Details** tab is displayed.

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2. Enter a name in the **Name** field and description in the **Description** field for the requirement.

3. Select the appropriate **Status, Priority** and **Owner** from their respective drop-down lists.

   Note: The default Owner is the user who created the requirement. You may assign the requirement to someone else, but you may not be able to modify it again after it is saved if you do not have security privileges to do so.

4. Save the requirement by selecting **Requirement > Save Changes** from the menu, or by clicking the **Save Changes** button. To delete the requirement, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

The first time you save a requirement, that requirement is entered into the CaliberRM database and a creation entry (Rev. 1.0) is made in the change history record. Each time you change a requirement and save it, you may be prompted to enter a comment about the change. The change and the comment are entered in the change history record. See "Requirement History" on page 218 for more information. To avoid unwanted change history data, fully define the requirement before saving it. You can turn the **Comment** dialog box on or off through the CaliberRM **Options** dialog box.

Assigning Attribute Values

User-defined attributes help fully define the requirement by allowing users to customize the data that is tracked and stored. User-defined attributes are assigned by the administrator at requirement type creation. The administrator also creates custom attribute tabs when user-defined attributes are present. The attributes appear in the tab set. Like other fields in a requirement definition, user-defined attributes must be assigned values.

To assign attribute values to a requirement:

1. Select the requirement to which you want to assign values.

2. Click the **Attributes** tab.

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The **User Attributes** tab displays all user-defined attributes for the requirement. For a description of the different attribute types, see "Attribute Types" on page 159.

3. Make the appropriate selections for each of the attributes.

4. Save your changes by selecting **Requirement > Save Changes** from the menu, or by clicking the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

5. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

Assigning Responsible Users

Users that are accountable for the completion of a requirement are assigned responsibility for that requirement. Typically, several individuals are assigned to

each requirement. For example, the business analyst who created the requirement is assigned, as well as a developer, tester and manager. When requirements are changed, the users assigned to them are notified in order to keep development on track. Automatic notification is enabled by an administrator in the Framework Administrator. See "Enabling Automatic Notification" on page 59.

To assign users to a requirement:

1. Select the requirement to which you want to assign users.

2. Click the **Responsibilities** tab. The **Responsibilities** tab displays project groups and member selection boxes.
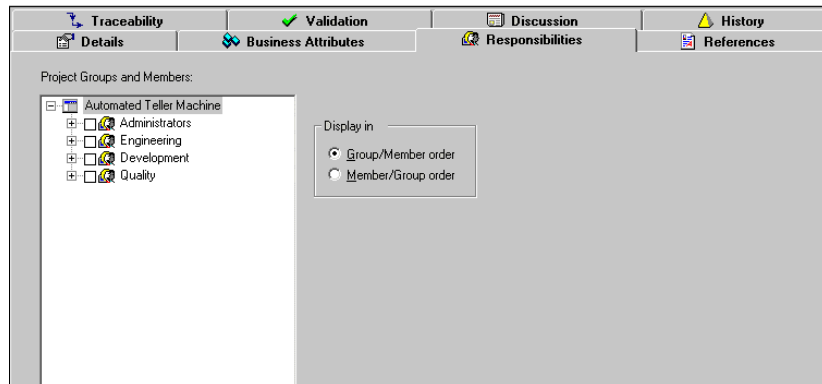
> *Note: The lists are limited by the group membership assigned for the project in Framework Administrator.*

3. Expand or collapse a list by clicking the plus or minus sign to the left of the group/member name. A darkened check box indicates that at least one member of that group has been selected.

4. To select **all** members of a group, select the check box to the left of that group.

    To select only **certain** members of a group, select the check box to the left of each member you want to assign.

    *Note: To display users first in the tree, select the **Display in Member/Group order** check box. To assign a user that is a member of multiple groups, but*

only as a responsible member of one of those groups, select that group's check box.

5. Once a user is assigned, CaliberRM notifies that person by email of specific events, as defined in Framework Administrator. See "Setting Up Automatic Notification" on page 34 for more information on automatic notification.

6. Repeat Steps 3-5 to assign users from each group as needed.

7. Save your changes by selecting **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

8. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

Note: You can also assign users from the Requirement Grid. See "Modifying Requirements from the Grid" on page 237 for more information.

VALIDATION PROCEDURE

When you create a requirement, it is often helpful for testers to know how to verify that the requirement is implemented properly. Therefore, CaliberRM allows you to type in a validation procedure for each requirement if you want. The validation procedure is "free form," which means that the procedure can be in any form you want, from a paragraph to a numbered list of steps.

To define the requirement validation procedure:

1. Select the requirement for which you want to define the validation procedure.

2. Click the **Validation** tab. The **Validation** tab is displayed.

3. Type the validation procedure in the **Validation Procedure** field.

4. Save your changes by selecting **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Edit > Cancel Changes** from the menu, or click the **Cancel Changes** button.

5. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

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COPYING REQUIREMENTS

To copy an existing requirement:

1. Select the requirement you want to copy.

2. Click the **Copy** button.

3. Select the requirement to which you want to paste the first requirement.

4. Click the **Paste** button to paste the copied requirement. The copied requirement is pasted as a child of the selected requirement.

   If the **Allow user to override default behavior** option is selected on the **Clipboard** tab in the CaliberRM **Options** dialog box, the **Paste Children?** dialog box is displayed. Click the **Yes** button to paste children, or **No** to paste only the copied requirement.

   The requirement is copied. The new requirement is assigned a different serial number than the original requirement.

You can also hold down the Control (CTRL) key, click on the requirement you want to copy and drag and drop it into the desired location.

MODIFYING A REQUIREMENT

To modify a requirement:

1. Select the requirement you want to modify.

   Note: If you are not authorized to change the requirement, the data fields appear disabled.

2. Select the tab containing the information you want to modify.

3. Edit the requirement information.

   As soon as you begin editing the requirement, CaliberRM automatically locks it to prevent someone else from modifying it at the same time. The requirement icon in the requirement list appears with a lock on it. The lock remains in place until you either save your changes or cancel them.

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Note: Modified requirements display an asterisk (*) to the right of the field to indicate that a change has been made to that requirement field. See "Field Changed Indicator" below for information on this feature.

4. To save your changes, select **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

5. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

Field Changed Indicator

When you make changes to a requirement, an indicator (*) appears on the right side of the field you have changed to indicate that changes have been made to that field.

Field Changed Indicator

You can right-click on the indicator to view a toolbar, which allows you to either revert the change to the field's original setting by clicking the revert button, or close the toolbar by clicking the close button.

Revert Close
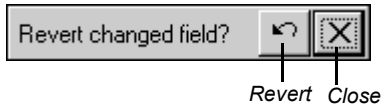
Note: Data on the References tab and the Traceability tab is not revertible; you need to change it back manually.

REQUIREMENT HISTORY

CaliberRM maintains a history record for each requirement. The history record assigns revision numbers and keeps a list of changes for each revision. All changes

made to a requirement, including changes to specific attributes, the requirement description, status, priority and more are recorded in the requirement's history.

Viewing the History Record

To view the history of a requirement, select the requirement and click the **History** tab. The history record is made up of two parts: the **Revisions** list and the **Changes** list.

The upper window contains the **Revisions** list. Each entry in the revisions list contains the following fields:

*   **Rev #:** When a change is made, CaliberRM automatically updates the revision number. The change may cause a major or minor revision number change. This is determined by your CaliberRM administrator when attributes types are defined.

*   **Date/time:** The date and time the change was made.

*   **Changed by:** The userid or name of the person who made the change.

*   **Comment:** If a supporting comment is entered at the time the change is saved, it is displayed here.

You can sort the revision list in ascending order by revision number, date/time, user or comment by clicking on the appropriate header.

Click the header a second time to sort in descending order.

The first entry in the list is the requirement creation entry. It is assigned a revision number of 1.0.

Revision List ———

Major and minor revision numbers ———

List of changes for each revision ———
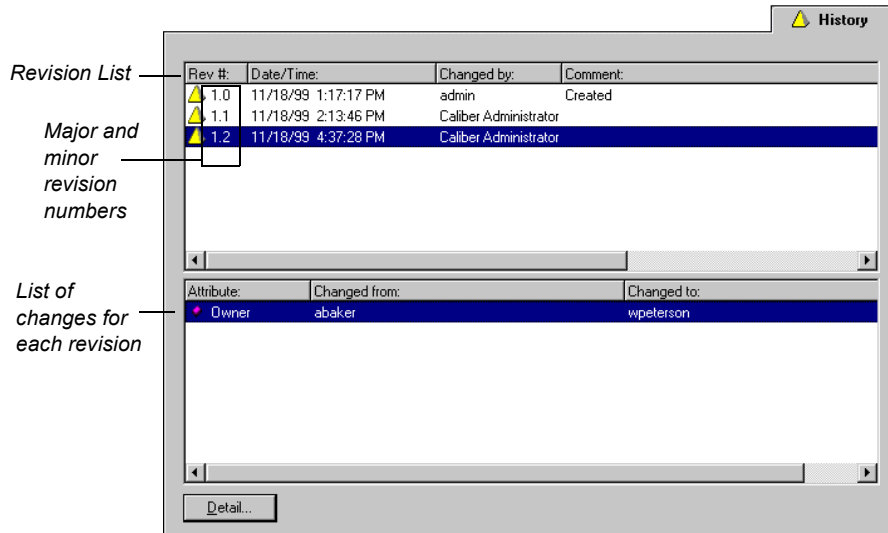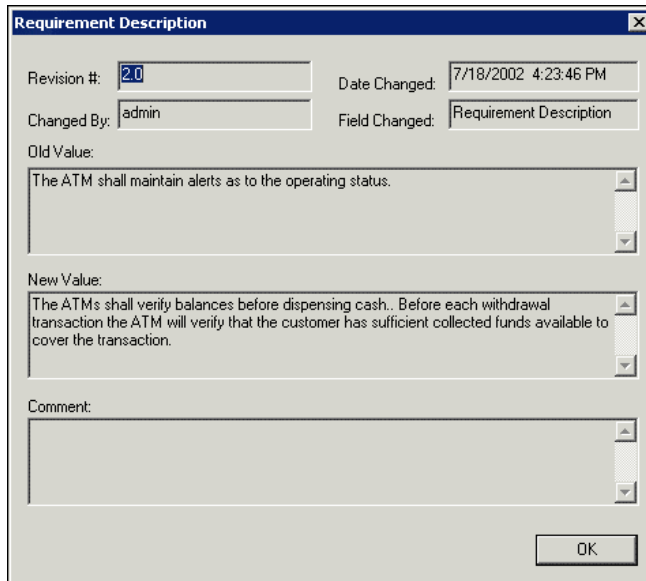
The bottom window displays a list of **Changes** for the revision selected in the upper window. Entries in the change list contain the following fields:

- **Attribute:** the changed field

- **Changed from:** the original data

- **Changed to:** the new data

Viewing Change Detail

You can see all details about a particular change in one view by double-clicking on the change you have selected, or by clicking the **Detail** button.

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The **History Details** dialog box is displayed containing the revision number, the date and time changed, the user who made the change, the user comments about the change, the field changed, and the original and new data for the field.

COMPARING REQUIREMENTS

You can compare requirements three ways: to previous versions of the same requirement, to another requirement, or to any version of another requirement, and print a report of the comparison.

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Comparing a Requirement to a Previous Version

To compare versions of the same requirement:

1. Select **Requirement > Compare Requirements > to previous version** from the menu, or right-click on the requirement in the requirement tree and select that option in the pop-up menu.

   CaliberRM compares the current version of the requirement with the previous version of the requirement, and displays an .html file that informs you of the number of differences.

2. Click **OK**. You can now see the differences between the two versions. The differences are identified by shaded rows a red arrow to the left of the attribute(s) that differ.

3. You can print the report by selecting **File > Print** and following normal Windows printing procedure.

Comparing a Requirement to Another Requirement or Version

You can also compare a requirement to any version of another requirement.

To compare a requirement to any version of another requirement:

1. Select a requirement you want to use for a comparison.

2. Select **Requirement > Compare Requirement > to other requirement or version** from the menu, or right-click on the requirement in the requirement tree and select the option in the pop-up menu.

   The **Compare Requirements** dialog box is displayed as shown on the following page.

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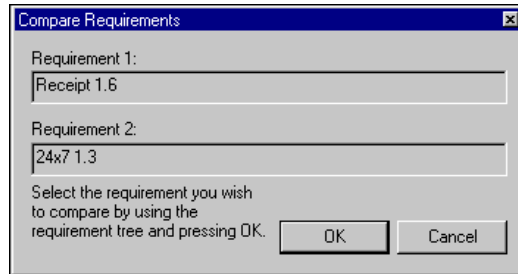
3. Select the requirement you want to compare to from the requirement tree or, select the requirement version you want to compare to from the **Requirement Version** drop-down list.

   The requirement that you choose to compare to appears in the Requirement 2 section of the **Compare Requirements** dialog box.

4. Click **OK** to continue with the comparison, or click **Cancel** to discontinue the comparison.

   CaliberRM compares Requirement 1 with Requirement 2, and displays an .html file that informs you of the number of differences.

5. Click **OK**. You can now see the differences between the two requirements. The differences are identified by shaded rows a red arrow to the left of the attribute(s) that differ.

6. You can print the report by selecting **File > Print** and following normal Windows printing procedure.

CHANGING THE REQUIREMENT ORDER

You can change the requirement order three ways:

- Using the commands in the Edit menu
- Using the buttons on the toolbar

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- Dragging and dropping the requirements
- Using the commands in the **Edit** menu or the buttons on the toolbar, you may move requirements only within the parent. You cannot change the hierarchical level of requirements using the toolbar buttons, nor can you move a requirement to another requirement type. Using drag-and-drop, you can move a requirement anywhere you want, even to another requirement type.

Note: You must have Create level access to move a requirement into another requirement type, and Delete level access to move a requirement out of a requirement type.

To change the requirement order using the commands in the Edit menu, select the requirement you want to move and select **Edit > Move Up** or **Edit > Move Down** from the menu.

To change the requirement order using the toolbar buttons, select the requirement you want to move and click the **Move Up** button or **Move Down** button.

To change the requirement order using drag-and-drop:

1. Select the requirement you want to move by clicking and holding down the left mouse button.
2. Drag the requirement to the location you want to move it.

   2.1 If you want the requirement to move up one hierarchical level, drag it above its parent.

   2.2 If you want the requirement to move down one level, drag it on top of the requirement you want to be its parent.

   2.3 If you want to move the requirement to another requirement type, drag it to the desired location within that requirement type.

   Note: When moving requirements to another requirement type, only user-defined attributes that are common to both requirement types will retain their values.

3. When the requirement is in the location you want it, release the left mouse button.

The requirement is moved and the hierarchical numbers are automatically updated.

SEARCHING FOR A REQUIREMENT BY NAME

To search for a requirement:

1. Select **Edit > Find In Tree** from the menu or click the **Find** button. The **Find in Tree** dialog box is displayed.
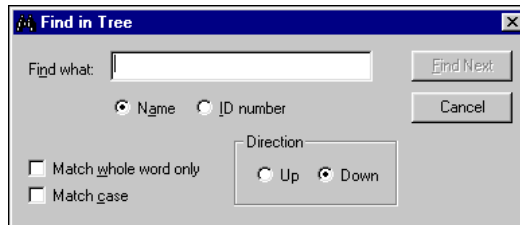
2. Type the name of the requirement you would like to find, or any portion of the name in the **Find What** field.

    Note: The Find function only searches for text in the requirement list. It does not search requirement descriptions.

3. If you want to search for a requirement by name, select the **Name** option button. If you want to search for a requirement by ID number, select the **ID number** option button.

4. If you want the search engine to find requirements that match exactly, select the **Match whole word only** check box.

5. If you want the search engine to match requirement names by case, select the **Match case** check box.

6. Select the direction in which to search (**Up** from the currently selected requirement, or **Down**).

7. Click the **Find Next** button until the requirement you are searching for is selected.

SEARCHING FOR A REQUIREMENT BY DESCRIPTION

You can search for a requirement by matching a text string to one in the requirement description. You can search the entire project or you can narrow your search to a requirement type or a requirement sub-tree.

The **Search Description** dialog box allows you to input the string you are searching for and tells CaliberRM where to search.
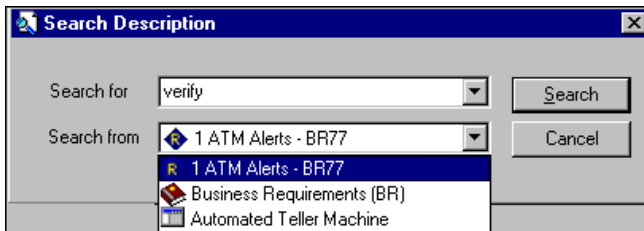
The choices in the **Search from** drop-down list are based on what is currently selected in the requirement tree.

To search for a requirement that contains a matching text string in its description:

1. Click the **Search** button or select **Edit > Search Description** from the menu.

2. Enter the text you want to search for in the **Search for** field.

3. Select the project, requirement type, or requirement you want to search in the **Search from** drop-down menu.

4. Click **Search.**

The search results are automatically displayed in the Requirement Grid. Click on the requirement to show the requirement description. All Requirement Grid functionality is available.

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See "Requirement Grid" on page 231 for instructions on how to use the Requirement Grid.
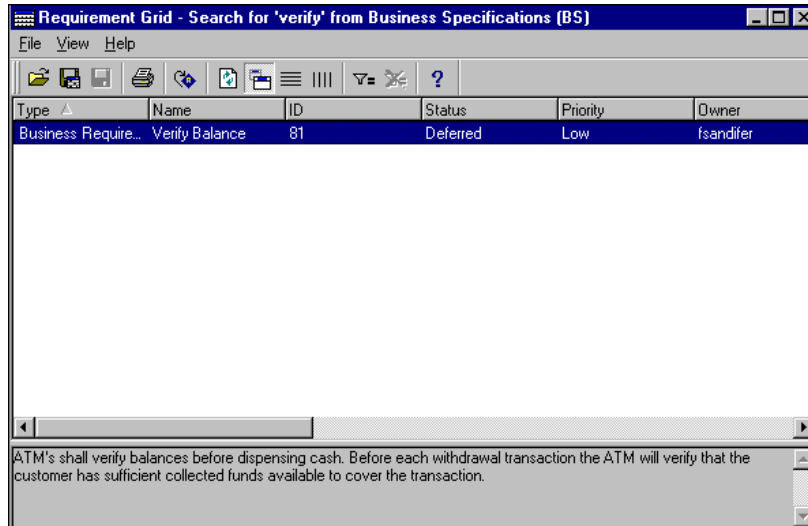
DELETING A REQUIREMENT

WARNING: IF YOU DELETE A REQUIREMENT, YOU CANNOT RECOVER DELETED DATA.

To delete a requirement:

1. Select the requirement you want to delete.

2. Select **Edit > Delete** from the menu, or click the **Delete** button.

   A message box is displayed verifying that you want to delete the requirement. Child requirements, if present, are deleted as well.

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3. Click **Yes** to delete the requirement and its children, or **No** to save it.

4. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

DISPLAYING REQUIREMENT IDENTIFICATION NUMBERS

Each requirement within a project has two different numbers associated with it. One is the hierarchical number, which is determined by the requirement's placement within the project tree or hierarchy. The hierarchical number changes as requirements are added, moved or deleted.

The other number associated with each requirement is its unique serial (or ID) number. The serial number generally does not change, regardless of the requirement's position within a requirement type, but it will change if you move a requirement to a different type. It is not reused if the requirement is deleted. Serial numbers are composed of the requirement type tag and a number. For example, Business Specification types may have the tag "BS." Serial numbers for Business Specification types have the "BS" tag as a prefix for the serial number.

To display the requirement hierarchical numbers, select **View > Numbers > Hierarchical** from the menu, or click the **Show Hierarchical Numbers** button. The hierarchical numbers appear in the requirement list.

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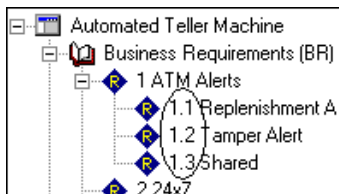
To display the requirement serial numbers, select **View > Numbers > Serial** from the menu, or click the **Show Serial Numbers** button. The serial numbers appear in the requirement list.
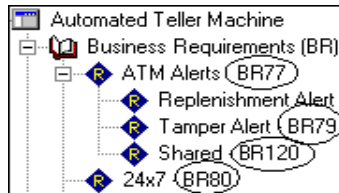
REGISTERED INTEREST

Registered Interest is a feature of CaliberRM that allows you to receive email notification that a change has been made to a requirement, even if you are not assigned as a responsible person for that requirement.

To register interest in a requirement, select the requirement and click the **Register Interest** button on the toolbar.

You can also right-click on the requirement in the requirement list and select Register/Unregister from the drop-down list.

The requirement that you registered interest in now displays an icon indicating that you will receive notification of any changes made to this requirement.

If you want to unregister interest in a requirement, repeat the steps above and the icon is removed.

Chapter 14: Requirement Grid

OVERVIEW

The Requirement Grid is used to display a set of requirements. The grid view includes the requirement type, tag, name, status, version, priority, responsible users, owner and many other attributes. You can also select a requirement and view its description in the lower pane of the Requirement Grid.

The appearance of the information on the grid may be changed by hiding and rearranging columns. The requirements can be filtered in the grid to show only those meeting the filter criteria. The modified view can be saved and printed.

OPENING THE REQUIREMENT GRID

Open the Requirement Grid by selecting **Tools > Requirement Grid** or by clicking the **Requirement Grid** button on the toolbar. The **Open Requirement Grid** dialog box is displayed.
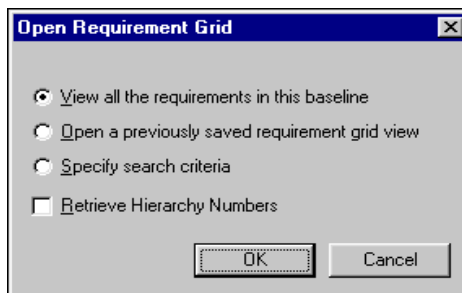
There are four ways to display a requirement grid:

• To **View all the requirements in this project** select this option and see "View All Requirements in this Project" on page 232.

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- To **Open a previously saved requirement grid view** select this option and see "Open a Previously Saved Grid" on page 233.

- To **Specify search criteria** select this option and see "Search for Specific Data" on page 233.

- To display the requirement hierarchy numbers in the grid, select the Retrieve **Hierarchy Numbers** check box. Using this feature may slow performance.

View All Requirements in this Project

When you select this option, all requirements in the open project are displayed on the grid. You can sort the grid in ascending order by clicking on a column header by which you want to sort, and descending order by clicking the header a second time.

Note: Sorting on a single selection list user-defined attribute sorts items by display order within the List Box Contents for that particular UDA.

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Open a Previously Saved Grid

Note: For information on how to save a grid view, see page 239.

To display a previously saved view:

1. Select **File > Open** from the menu, or click the **Open** button.

   The **Open** dialog box is displayed.

Open			? ✕
Look in:	📁 Caliber	▼	🔼 📁 ☷ ▦

📁 log
📄 All Reqs.rgv
📄 Hardware Reqs.rgv
📄 Order Processor Reqs.rgv
📄 Software Reqs.rgv
📄 Web Site Reqs.rgv

File name:		Open
Files of type:	Requirement Grid View File (*.rgv) ▼	Cancel
☐ Open as read-only		

2. Select the file to open.

3. If you want the view to be read-only, select the **Open as read-only** check box.

4. Click **Open** to display the view, or **Cancel** to exit without displaying.

Search for Specific Data

*Note: **Specify search criteria** is another way of launching **Search Description**.
See "Searching for a Requirement by Description" on page 226 for more information.*

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To search for specific criteria:

1.   Enter the text in the **Search for** field or select the text from the **Search for** drop-down list.

2.   Enter the name of the project, requirement type or requirement you want to search from in the **Search from** field or select this information from the **Search from** drop-down list.
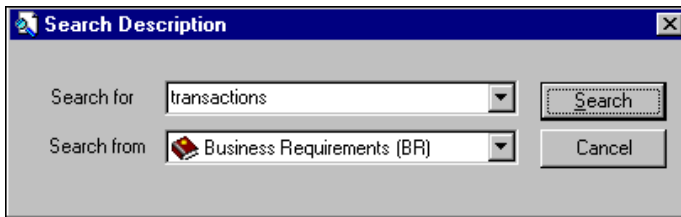
3.   Click **Search**. The Requirement Grid opens and displays the search results.

THE GRID VIEW

You can sort the grid in ascending order by clicking on any header and in descending order by clicking on the header a second time.

You can choose to have the Requirement Grid always display on top of other windows by selecting **View > Always on Top** from the menu or by clicking the **Always on Top** button.

You can also refresh the Requirement Grid data by selecting **View > Refresh** from the menu or by clicking the **Refresh** button.

To display **gridlines**, select **View > Grid** and select either **Horizontal** or **Vertical**. You can also turn gridlines on and off by clicking the **Horizontal Grid** and **Vertical Grid** buttons.

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Modifying the Requirement Grid View

The Requirement Grid view can be modified by moving and hiding columns. You can then save this view for display in the future.

To **move** the columns, click on a column header and hold down the left mouse button while dragging the header to the desired position. An arrow head is displayed as you move the header, to show where the column will be placed. When the column is in the desired position, release the left mouse button and the column is moved.

*To **hide** a column from the Requirement Grid:*

1. Right-click on the header of the column to be hidden.

2. Select **Hide Column** from the pop-up menu.

   Note: The column is not deleted, just removed from the view.

*To **return** hidden columns to the grid:*

1. Choose a location for the column.

2. Right-click on the column header next to the desired position.

3. Select **Insert Before** or **Insert After** in the pop-up menu.

   The **Insert Column** dialog box is displayed.
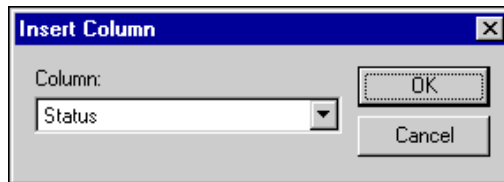
4. Select the column to be added.

   *Note: If all columns are already shown in the grid, there are no options to select in the **Column** field.*

5. Click **OK** to add the column, or **Cancel** to exit without adding the column.

Filtering the Grid View

You can filter columns in the Requirement Grid to display only the information you want to see.

To filter a column in the Requirement Grid, do one of the following:

- Right-click on a column heading, then go to Step 2 (quickest method),
- Select **View > Filter** from the menu, then go to Step 1, or
- Click the **Filter** button, then go to Step 1.

  The **Custom Filter** dialog box is displayed.
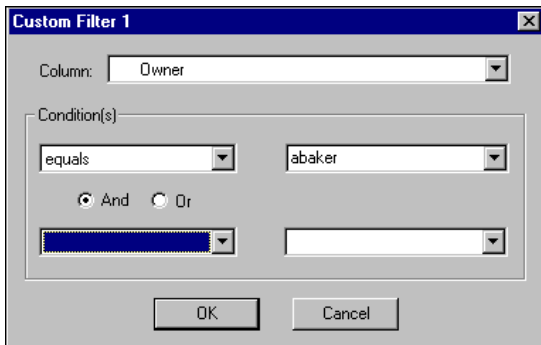
1. Select the **Column** you want to filter from the drop-down list.
2. Select an operator from the first **Conditions** drop-down list (i.e., begins with, equals, greater than, etc.).
3. Enter the text to filter on, or select from the drop-down list if applicable.
4. Select the **And** or **Or** option button and repeat Steps 3 and 4 to enter a second filter condition if desired.

   *Note: **And** displays the requirements that meet <u>both</u> criteria. **Or** displays the requirements that meet <u>one</u> or <u>both</u> of the conditions.*

5. Click **OK** to filter, or **Cancel** to exit without filtering.

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The filtered grid is displayed. The filtered columns are displayed with a filter symbol in the header.

Filter Indicator ——— ▽ **Type**

To return to the original view, click the **No Filter** button. All filters are removed.

GO TO REQUIREMENT

To go to a requirement in the project:

1. Select the requirement in the Requirement Grid list.

2. Select **Edit > Go To Requirement** from the menu, click the **Go To Requirement** button, or double-click on the requirement.

3. The **Details** tab of the selected requirement is displayed.

MODIFYING REQUIREMENTS FROM THE GRID

You can modify information on the Requirement Grid. All system and user-defined attributes, with the exception of **Type**, can be updated or modified.

To modify information on the grid:

1. Select a requirement in the list.

    Note: To select a group of requirements, select the first requirement, hold down the SHIFT key and select the last requirement. All requirements in between will be automatically selected. To select multiple individual requirements, hold down the CTRL key and select each requirement. Changing a requirement name is automatically disabled when multiple requirements are selected.

2. Right-click on the attribute you want to update.

    Note: When modifying multiple responsible users simultaneously on the Grid, the drop-down selection box displays users assigned to the requirement

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selected last. See ""Modifying Requirement Responsibility on the Grid" on page 239" for more information.

A selection window is displayed allowing you to **Modify** or **Go to requirement**.

> Modify
> Go to requirement
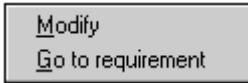
3. Select **Modify** to change the attribute.

A drop-down list appears displaying the values that can be assigned, or you just have the option to change the value of the attribute.

> **WARNING: IF YOU MODIFY AN ATTRIBUTE WITH MULTIPLE REQUIRE-MENTS SELECTED, ALL SELECTED REQUIREMENTS WILL BE MODIFIED TO THE SAME VALUE. IF YOU DO NOT WANT THE ATTRIBUTES TO HAVE THE SAME VALUE, SELECT REQUIREMENTS AND MODIFY THE ATTRIBUTES INDIVIDUALLY.**

4. Click on the new value from the drop-down list to assign the value.

5. Click the **Save** button to save your modification.

Modifying Requirement Responsibility on the Grid

To assign and unassign responsible users on the Grid:

1. In the Grid, select the requirement to which you want to assign users.

    Note: *To select a group of requirements, select the first requirement, hold down the SHIFT key and select the last requirement. All requirements in between will be automatically selected. To select multiple individual requirements, hold down the CTRL key and select each requirement.*

2. Right-click in the **Responsibilities** column and select **Modify**.

    The **Responsible Users** drop-down list is displayed.

    Note: *When modifying multiple responsible users simultaneously on the Grid, the drop-down selection box displays users assigned to the requirement selected last.*

3. Select the check box to the left of each user you want to assign to the requirement(s). You can select all members of a group by selecting the check box next to the group. A gray check box next to a group indicates that at least one member from that group is selected.

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4. Click **Done** in the **Responsible Users** drop-down list.

5. Click the **Save** button to save your changes.

To unassign users, clear the check boxes of the user(s) you want to unassign.

Note: When unassigning a responsible user across multiple requirements, make sure the last requirement selected contains that user. The drop-down selection box displays users assigned to the requirement selected last.

SAVING THE GRID VIEW

After you have finished filtering and rearranging the grid view, you may want to save it for future use.

To save the Requirement Grid view:

1. Select **File > Save As** from the menu, or click the **Save Profile** button. The **Save As** dialog box is displayed.
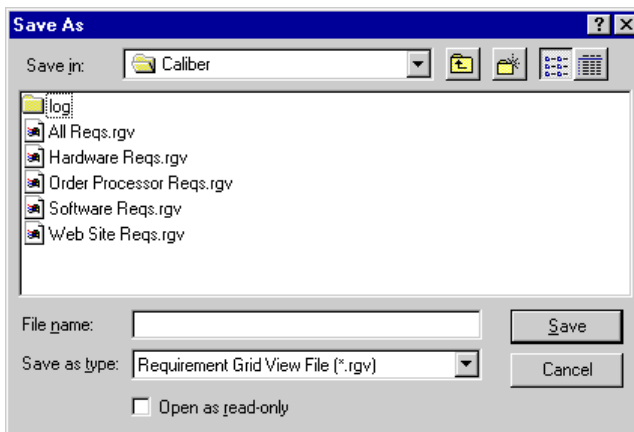
2. Enter a file name for the view.

3. Click **Save** to save, or **Cancel** to exit without saving.

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PRINTING THE GRID VIEW

When you have finished filtering and rearranging the Requirement Grid, you can print a report of the data.

To print the Requirement Grid:

1. While viewing the Requirement Grid, select **File > Print** from the menu, or click the **Print** button.

    The **Report Setup** dialog box is displayed.
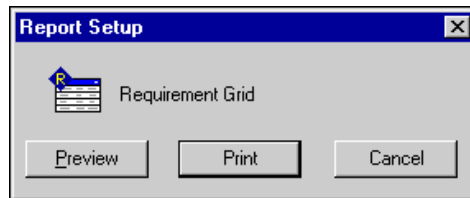
2. Click the **Preview** button if you want to view the report before printing.

3. Click the **Print** button. Print using normal Windows printing operations.

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Chapter 15: Shared/Mapped Requirements

SHARED REQUIREMENTS

Many times the same requirements are used for multiple projects. Often these requirements must meet specific standards that are precisely described in the requirement description field. Some of these descriptions can be very lengthy. Using the shared requirement function, you can share these requirement descriptions among projects. This allows you to easily create, modify and update common requirements while eliminating repetitious typing where errors can be made. Sharing requirements ensures that requirements common to more than one project are consistent from one project to another, or within the same project.

How Shared Requirements Work

The terms mapped and shared are used to define the shared requirements process. A **shared** requirement is one whose description field is used by other requirements. A **mapped** requirement is one whose description is linked to a shared requirement.

A typical use of shared requirements is shown and detailed on the following page.

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Project A - Shared Requirements Enabled	Project B - Shared & Mapped Enabled	Project C - Mapped Requirements Enabled
R1	R1-Shared	R1-Mapped
R2-Shared	R2-Shared	R2-Mapped
R3-Shared	R3-Mapped	R3-Mapped
R4-Shared	R4-Mapped	R4-Mapped

Requirement 2 in Project C is mapped to requirement 2 in Project A
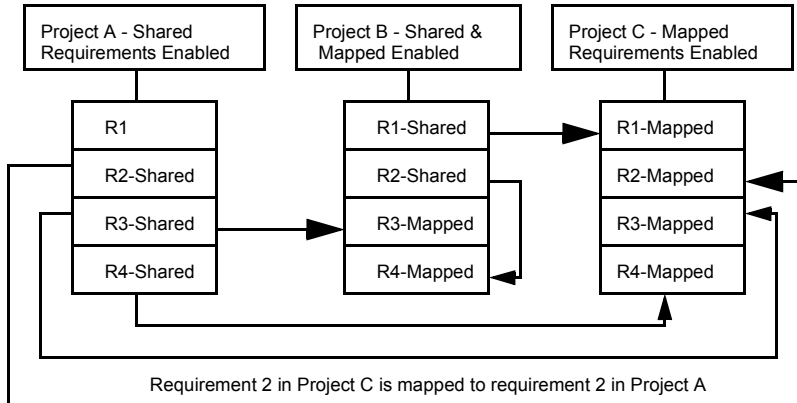
Project A contains a set of frequently used requirements. Projects B and C use some of the requirements defined in Project A. Instead of re-entering or modifying lengthy requirement descriptions in Projects B and C, you can use the shared requirement function to map requirements from Projects B and C to those in Project A. Now changes and updates made to shared requirement descriptions in Project A are automatically made in Projects B and C. The example also shows that Project B is set up to share and map requirements, which allows requirements to map to shared requirements in the same project. Specifically R4 is mapped to R2. Projects B and C show that requirements can map to more than one project.

The following rules apply to requirements that are shared or mapped:

- Only the information contained in the description field of the requirements is shared, not the other attributes, history or traceability data.

- Description fields of mapped requirements are disabled and are not editable.

- If mapping is disabled or disconnected, the description becomes independent and can be edited. In essence, it is no longer a mapped requirement.

- Requirements that have key references can be shared but cannot be mapped.

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- Mapped requirements cannot be shared.

- Shared descriptions cannot be mapped.

ENABLING SHARED REQUIREMENTS

To use shared requirements, an administrator must first enable this functionality at the project level.

To verify that shared requirements are enabled for the projects you want to share and map, select the **Shared Requirements** check box on the **Project Info** tab. This is accomplished by completing the following steps.

1. From the project drop-down list, open the project containing the shared requirements by clicking on the project name. The **Project Info** tab is displayed.

2. Verify the following information in the **Shared Requirements** area of the **Project Info** tab.

   Note: If you do not have administrative rights, the options are disabled.If sharing and/or mapping is not enabled for your project, contact your CaliberRM administrator.

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- In the project that contains the requirements you want to map, verify that the **Requirements in this project can be mapped to shared requirements** check box is selected.

- In the project that contains requirements you want to share, verify that the **Requirements in the project can be shared** check box is selected.

- To share and map requirements in the same project, verify that both boxes are selected.

MAPPING A REQUIREMENT

To map a requirement to a shared requirement:

1. Open the project that contains the requirement whose description you want to map.

2. Select the requirement to map or create a new requirement and leave the description field blank.

3. Select **Requirement > Map/Unmap Requirement** from the menu or click the **Map/Unmap Requirement** button on the toolbar. The **Mapped Description** dialog box is displayed.

4. Select the project that contains the requirement whose description you want to share.

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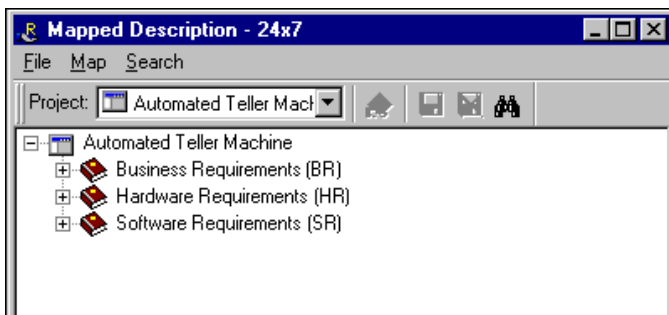
5. Expand the requirement list, locate the requirement whose description you want to share and select it.

6. Click the **Map/Unmap Requirement** button on the toolbar in the **Mapped Description** box.

   The shared indicator is displayed to the left of the shared requirement's name in the requirement list**.**
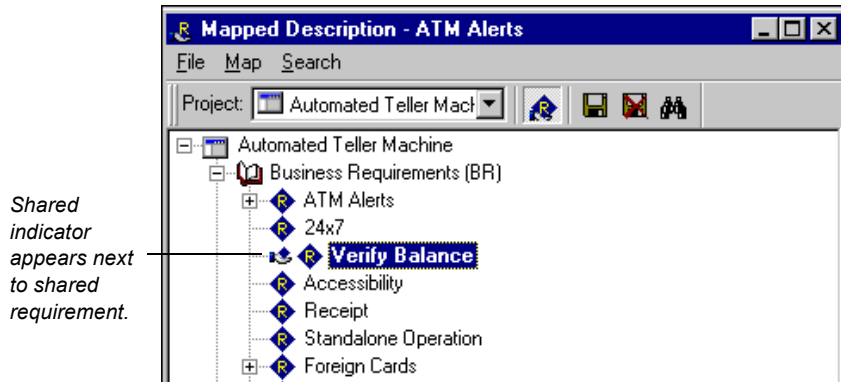
Shared indicator appears next to shared requirement.

7. Click the **Save** button to save your changes, or click the **Cancel Changes** button to cancel your changes.

8. Close the **Mapped Description** dialog box.

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CaliberRM returns to the open project. On the **Details** tab of the mapped and shared requirements, an icon is displayed next to the description field indicating that the requirement is either shared or mapped.

Shared/ Mapped icon

CaliberRM keeps track of mapped and shared requirements and allows you to view them in a diagram. See "Mapped Requirements Diagram" on page 249 for more information.

UNMAPPING A REQUIREMENT

To unmap a requirement:

1. Open the project that contains the requirement whose description you want to unmap.

2. Select the requirement to unmap.

3. Select **Requirement > Map/Unmap Requirement** from the menu, or click the **Map/Unmap Requirement** button on the toolbar.

4. Select the project that contains the shared requirements from the drop-down list in the **Mapped Description** dialog box.

5. Select the requirement currently shared with the requirement selected in Step 2.

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6. Click the **Map/Unmap Requirement** button on the Mapped Description toolbar.

7. Click the **Save** button to save your changes, or click the **Cancel Changes** button to cancel your changes.

The shared indicator to the left of the shared requirement's name in the requirement list disappears. On the **Details** tab of the mapped and shared requirements, the shared/mapped icon is removed.

MAPPED REQUIREMENTS DIAGRAM

To keep track of shared and mapped requirements, CaliberRM provides a way to view them in a diagram. Given a shared or mapped requirement, the graph displays the shared requirement and all requirements that map to it.

To display the Mapped Requirements Diagram, select a shared or mapped requirement in the tree and click **Show Graph** on the **Details** tab.

Show Graph Button

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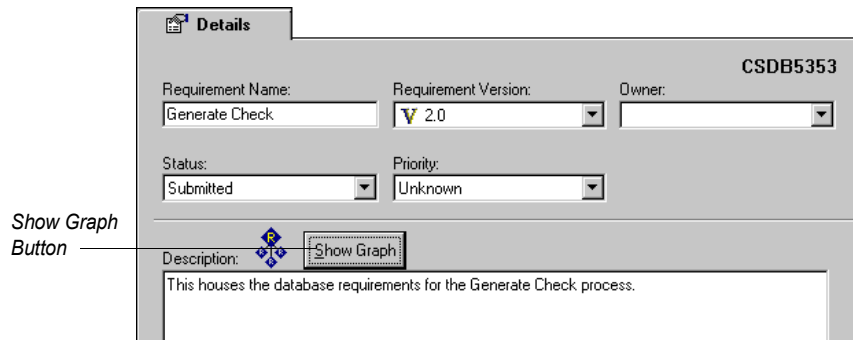
The **Mapped Requirement Diagram** window opens and displays the mapped diagram.
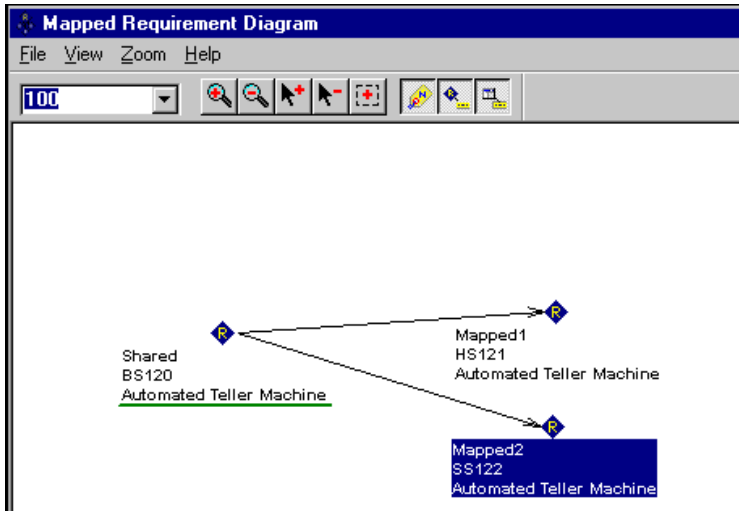
The functionality provided in this window is described in the table below.

Menu Item	Toolbar Button	Description
Zoom > Center		Zoom in or out 25%
Zoom > Point		Zoom in or out 25% and make a new center point
Zoom > Percentage	Drop-down Box	Select zoom percentage
Zoom > Rectangle		Draw a rectangle and zoom to fit
View > Tag		View/hide all object tags

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| Menu Item	Toolbar Button	Description
View > Name		View/hide all object names
View > Project		View/hide project names for each object
File > Print	No Button	Print the diagram

About the Diagram

The Mapped Requirements Diagram is a tree-like structure. The root of the tree is the shared requirement which is underlined in green, and the nodes of the tree represent the mapped requirements. Requirements in the diagram have three identifiers that can be switched on and off using the view/hide buttons on the toolbar. They are:

• the requirement serial number

• the requirement name (default setting)

• the project name

You can move objects around in the graph to more easily view the objects of interest. To move an object, click on the object and drag it to the desired location in the diagram.

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Double clicking a requirement opens the **Properties** dialog box.
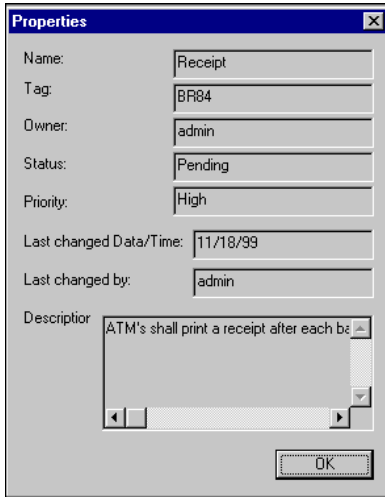
Right-clicking on a requirement displays a pop-up menu containing two selections: **Go to** and **Properties**. **Go to** selects that requirement in the tree and displays the Mapped Requirements Diagram for that requirement. **Properties** displays the **Properties** dialog box, shown above.

Chapter 16: Traceability

ABOUT TRACEABILITY

Changing an object whether it is a requirement, a test step, or a section of source code, can potentially require changes in other elements of the project. CaliberRM supports requirement traceability to allow you to see relationships between requirements and other related development and testing information. Linking related objects together helps to ensure that changes are implemented correctly at all levels.

Requirements can link to:

- Any requirement in the same project and across projects.

- tasks, topics and change requests in StarTeam.

- CaliberRBT Cause-Effect Graph files.

- Test sets, tests and test steps in TestDirector.

- Use Cases, classes, methods, packages and business processes in Select Enterprise.

- Software Configuration Management (SCM) objects.

- other objects supported by custom vendor add-in modules

When you create a traceability link, CaliberRM automatically creates **implied** links to other requirements which may be affected. For example, if there are direct links between a software requirement and a GUI requirement, and between the GUI requirement and a coding requirement, there is also an implied link between the software requirement and the coding requirement. Implied links are displayed in the Traceability Matrix as dotted arrows.

When a requirement is changed, links to other objects become **suspect**. Suspect traces are an indicator that other objects might be affected by the changed requirement and should be reviewed. Suspect traces are indicated in the Traceability Matrix by a red arrow with a black question mark centered on the arrow.

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You can view the Traceability Matrix to see all traceability links at a glance (see "The Traceability Matrix" on page 263), or you can view the Traceability Diagram to see the traceability links for a specific requirement (see "The Traceability Diagram" on page 259).

For information about traceability with a product integration, see the applicable white paper located on your CaliberRM product CD-ROM in the Integrations\Integration White Papers directory.

CREATING A TRACEABILITY LINK

Traceability links are described as *traces from* an object and *traces to* an object.

To create a traceability link:

1. Select the requirement you want to link to another requirement.

2. Click the **Traceability** tab. The **Traceability** tab is displayed.
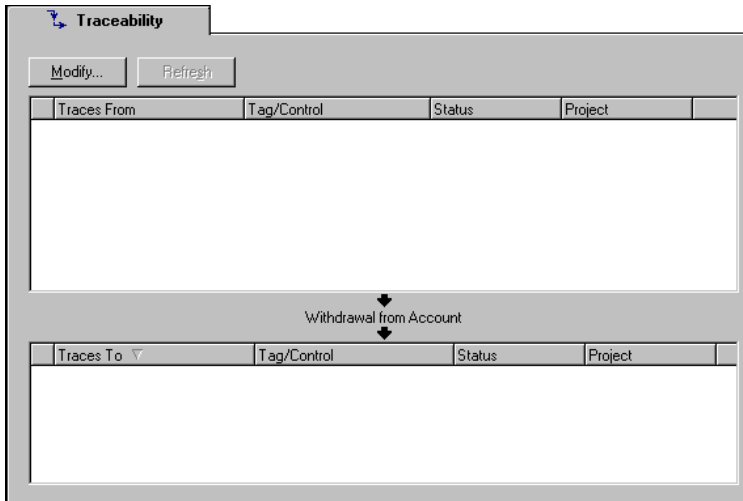
3. Click the **Modify** button. The **Open a Project** dialog box is displayed.

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4. Select a project. Click **OK**.

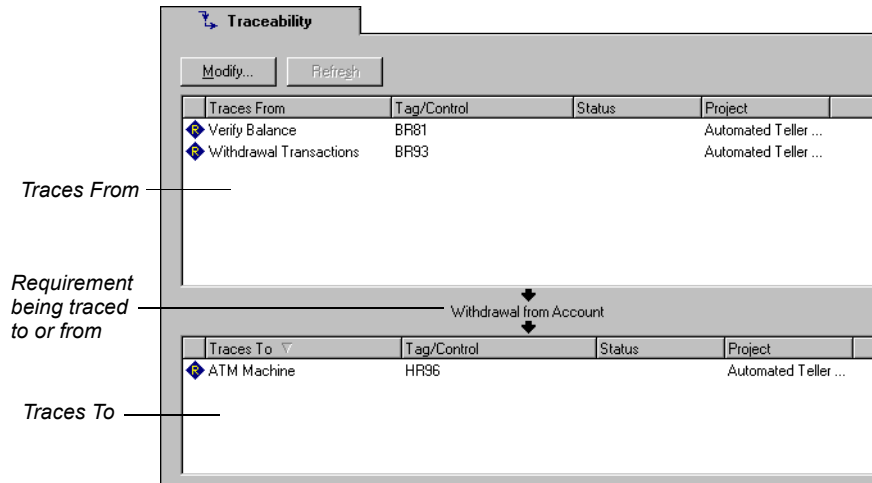   The **Traceability Modification** dialog box is displayed.
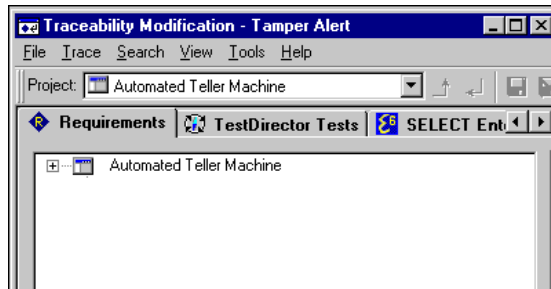
5. Expand the requirement list by clicking the plus sign ⊞.

6. Navigate the list until you find the requirement to which you want to link.

   *Note: You can view requirement properties by right-clicking the requirement in the list and selecting **Properties**.*

7. Select the requirement in the list and click the **Trace From** or **Trace To** button.

8. Repeat Steps 6-7 until you have created all of the traceability links you need for the selected requirement.

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The trace link indicators appear in the requirement list.
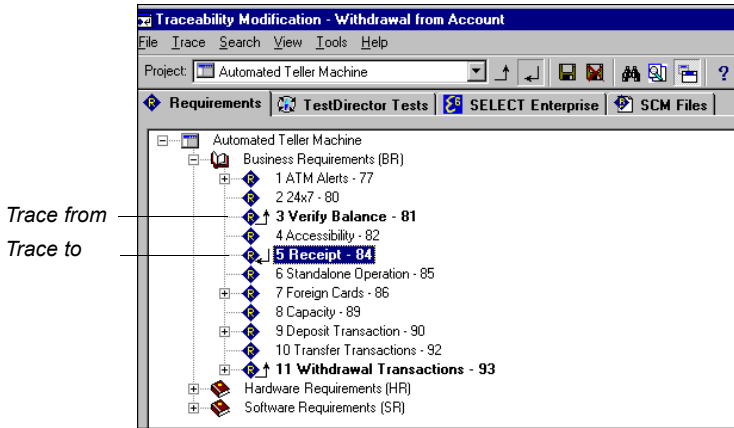
9. Click the **Save** button.

10. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

11. You can close the **Traceability Modification** window and return to the **Traceability** tab by clicking the **Close** button in the top right corner or you can leave this window open if you need to create traces for other requirements.

The requirement trace links are displayed on the **Traceability** tab.

12. To save your changes, select **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To cancel changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

DELETING A TRACEABILITY LINK

To delete a traceability link, do one of the following:

If you are working on the **Traceability** tab:

1. Select the requirement with the link you want to delete.

2. Right-click on the trace you want to delete and click **Remove**.

If you are working in the **Traceability Modification** dialog box:

1. Select the linked requirement's project from the drop-down list.

2. Expand the requirement list by clicking the plus sign ⊞.

3. Navigate the list until you find the requirement whose link you want to delete.

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4. Select the requirement in the list and click the **Trace From** or **Trace To** button.

5. To save your changes, click the **Save Changes** button. To cancel changes, click the **Cancel Changes** button.

6. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

7. Close the **Traceability Modification** dialog box by clicking the **Close** button in the top right corner.

MODIFYING TRACES ON THE TRACEABILITY TAB

*To modify trace link information from the **Traceability** tab:*

1. Select a requirement and click its **Traceability** tab.

2. Right-click on an object in the **Traces To** or **Traces From** area. The following options appear in the pop-up menu.

```
Modify...
Go to
Remove
Make Suspect
```
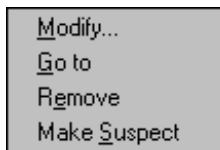
The following commands are available:

• **Modify**: Opens the **Traceability Modification** window.

• **Go To**: Navigates to the **Traceability** tab of the requirement you have selected.

• **Remove**: Deletes the trace.

• **Make Suspect**: Makes the link a suspect link.

3. Select a command and save the changes to the requirement when finished.

THE TRACEABILITY DIAGRAM

Changing a requirement can dramatically impact project flow. The **Traceability Diagram** allows you to quickly analyze an individual requirement to see how the change has impacted its relationships with other objects in the project.

Viewing the Diagram

To view the Traceability Diagram for a specific requirement, select **Tools > Traceability Diagram** from the menu, or the click the Traceability Diagram button on the toolbar. These items are only available when a requirement is selected in the tree.

The **Trace Diagram** window opens and displays the traceability links to and from the requirement selected in the requirement tree.

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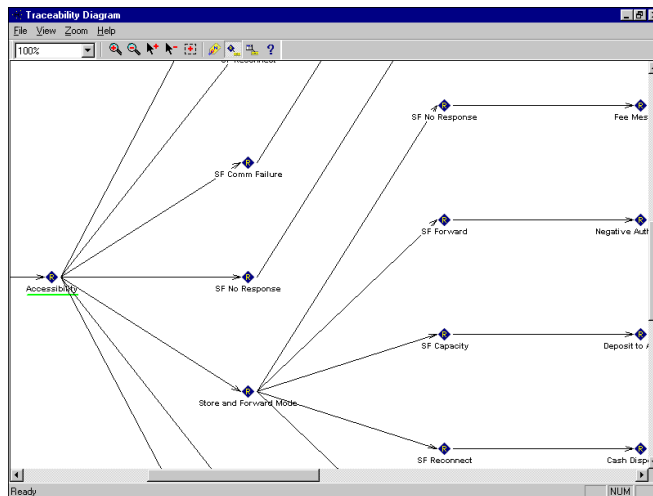
The following table describes the diagram menu items and toolbar buttons.

Menu Item	Toolbar Button	Description
Zoom > Center		Zoom in or out 25%
Zoom > Point		Zoom in or out 25% and make a new center point
Zoom > Percent	Drop-Down Box	Select a zoom percentage
Zoom > Rectangle		Draw a rectangle and zoom to fit
View > Tag		View/hide all object tags
View > Name		View/hide all object names.
View > Project		View/hide project names for each object.
File > Print	No Button	Print the diagram.

The selected requirement is located in the center of the diagram and underlined in green. Other objects in the diagram include requirements, Select Enterprise, TestDirector and SCM objects that are represented by their associated file type icon. The *trace to* objects are located to the right of the target, while the *trace from* objects are located to the left. The arrows represent the direction of the trace.

You can move objects around in the graph to more easily view the objects of interest. To move an object, click on the object and drag it to the desired location in the diagram.

To more easily recognize objects in the diagram, there are three identifiers that can be switched on and off using the view/hide buttons on the toolbar. They are:
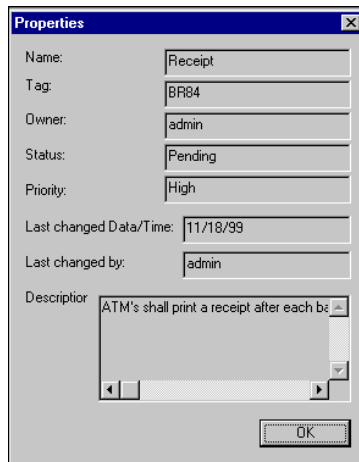
• the object serial number,

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- the object name (default setting),
- the project name.

Requirement Objects

Requirements are represented in the diagram by the requirement icon. Double-clicking a requirement node selects it in the requirement tree and makes it the focus of the diagram.

Right-clicking a requirement displays a pop-up menu containing two selections: **Go to** and **Properties**. **Go to** selects that requirement in the tree and displays the Traceability Diagram for that requirement.

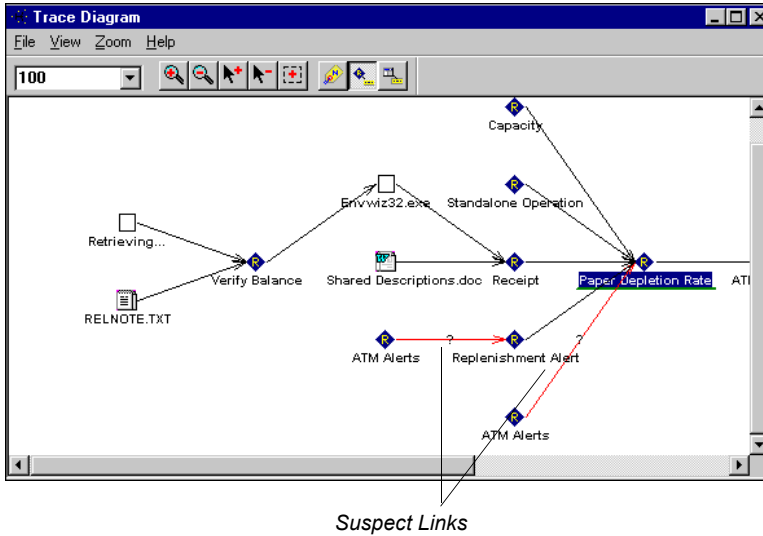**Properties** displays the requirement **Properties** dialog box.

Suspect Links

Suspect links are indicated by a red arrow with a black question mark centered on the arrow, as shown on the following page.

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Suspect Links

Circular Traces

A circular trace occurs when an object traces back to itself directly or indirectly. When CaliberRM detects a circular trace, the diagram for that branch stops and the circular trace indicator is displayed on the diagram, as shown on the following page.
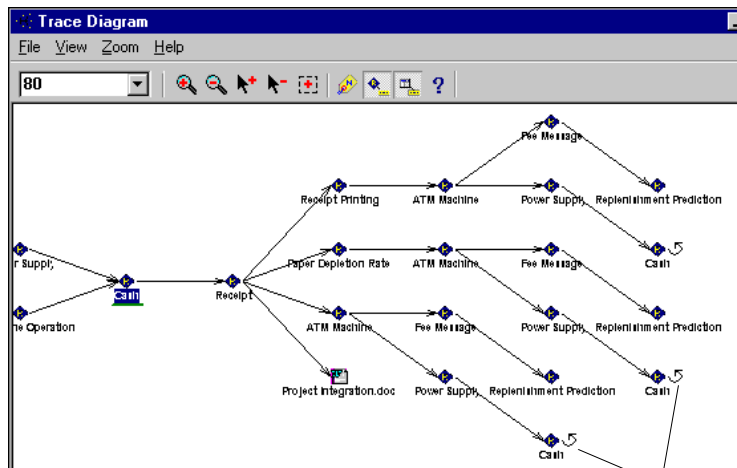
Circular Traces

THE TRACEABILITY MATRIX

The Traceability Matrix is used to display all the trace links in one view. You can
modify the Traceability Matrix to show only the links you need to see. There are
several options for modifying the matrix view: filtering by project and object,
viewing requirements by tag only, viewing only row-to-column or column-to-row
links. You can save the view you have modified and print a report of the data
selected.

Opening the Traceability Matrix

To open the Traceability Matrix window, select **Tools > Traceability Matrix** from
the menu, or click the **Traceability Matrix** button. The **Traceability Matrix**

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
window opens and displays the last active matrix view (if it was saved) or the default matrix.
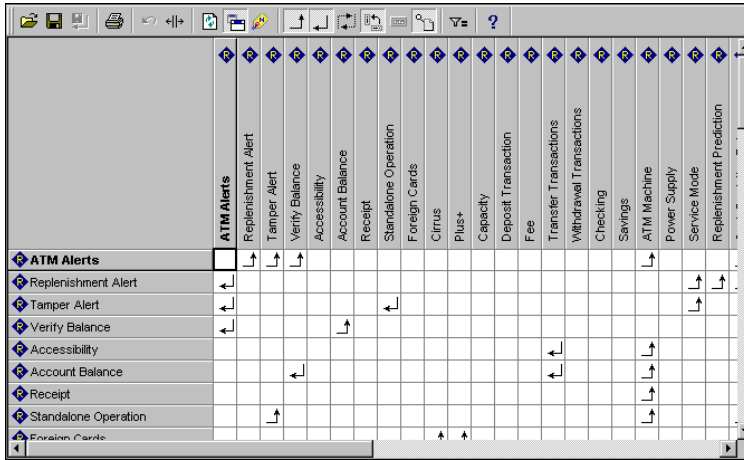
The default view contains all requirements in the open project in rows and columns. The direction of the arrow indicates the direction of the trace. You can modify the view to see the trace links that interest you.

THE MATRIX VIEW

There are many options for viewing the Traceability Matrix. The following table details the matrix options, toolbar buttons and their functions.

Menu Item	Toolbar Button	Description
Edit > Auto Size		Sets the column width.
View > Refresh		Refreshes the matrix data.

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Menu Item	Toolbar Button	Description
View > Always on Top		Displays the matrix on top of all open windows.
View > Requirement by Tag		Allows you to view requirements by their tag instead of their names.
View > Row to Column		Displays objects in rows as tracing to objects in columns.
View > Column to Row		Displays objects in columns as tracing to objects in rows.
View > Implications		Displays implied links.
View > Vertical Columns		Allows you to toggle between vertical and horizontal column headings. Vertical is the default.
View > No Traces		Displays requirements without traces as dark gray in the rows and columns.
View > Object Icons		Displays objects icons in rows and columns.
View > Filter		Displays the **Traceability Filter** dialog box.

SAVING TRACEABILITY MATRIX VIEWS

To save the Traceability Matrix view:

1. Select **File > Save** from the menu, or click the **Save** button.

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The **Save As** dialog box is displayed.
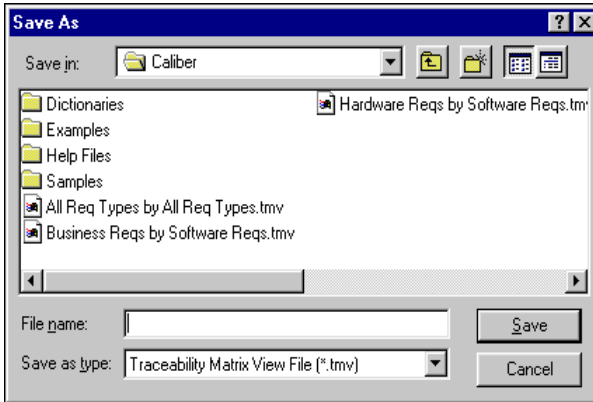
2. Select a location to save your file.

3. Enter a **File name** for the view.

4. Click **Save** to save, or **Cancel** to exit without saving.

OPEN A PREVIOUSLY SAVED MATRIX VIEW

To open a saved Traceability Matrix view:

1. Select **File > Open** from the Traceability Matrix menu, or click the **Open** button.

    The **Open** dialog box is displayed as shown on the following page.
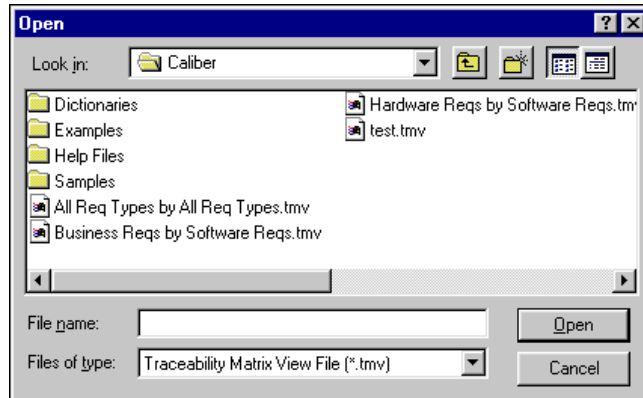
2. Select the view you want to open.

3. Click **Open** to display the view, or **Cancel** to exit without opening the view.

FILTERING THE TRACEABILITY MATRIX

You can filter the Traceability Matrix to show specific objects, including requirement, test, modeling and SCM. The filter requirements option allows you to display information from multiple projects. Requirements from projects to which you do not have administrative privileges appear on the matrix but are labeled as "secured."

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To filter CaliberRM requirement objects:

1. Select **View > Filter** from the menu, or click the **Filter** button. The **Traceability Filter** window opens to the **CaliberRM Projects** tab.
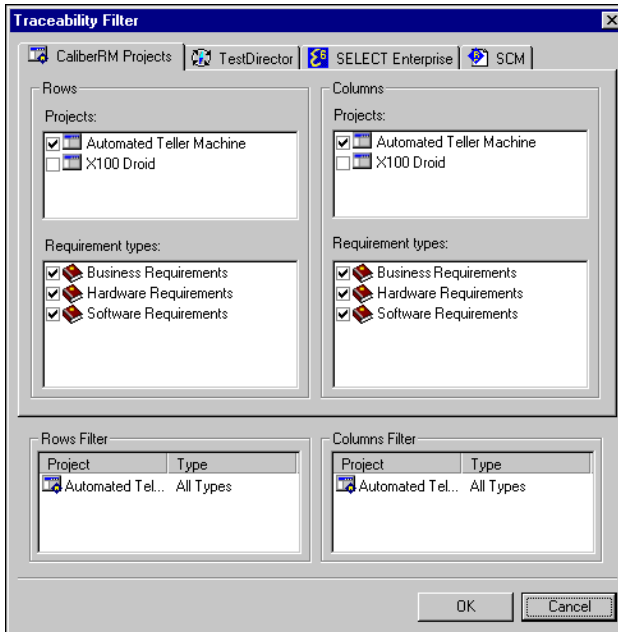
2. Select the project to appear in the rows, then select the project to appear in the columns.

3. Select the requirement types to appear in the rows, then select the requirement types to appear in the columns.

   The items you select are listed in the Rows Filter and Columns Filter areas at the bottom of the **Traceability Filter** dialog box. These are the items that will appear in the matrix.

4. Click **OK**. The filtered view is displayed.

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MODIFYING TRACE LINKS IN THE TRACEABILITY MATRIX

To create, modify or delete traceability links within the Traceability Matrix:

1. Locate the requirements on the matrix that you want to create, modify or delete a link between.

2. Double-click on the matrix square that corresponds to both requirements. The **Trace** dialog box is displayed.
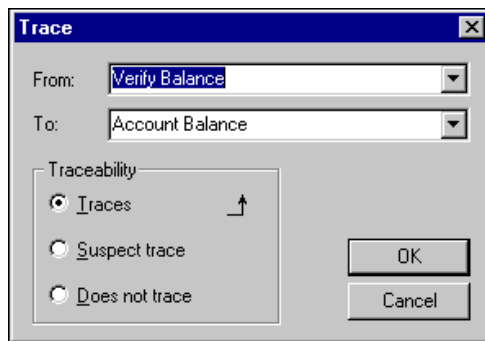
The requirement listed in the **From** field is the row requirement and the one in the **To** field is the column requirement

3. Select the **Traces** option button to create a trace link.

4. Select the **Suspect Trace** option button to make an already active trace suspect.

5. Select the **Does not trace option** button to delete a trace link.

6. Click **OK** to make the change, or **Cancel** to exit without changing.

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If any implied links were created due to the change, they are displayed on the matrix.

7. To save your changes, select **File > Save Traceability** from the menu, or click the **Save Traceability** button.

PRINTING THE TRACEABILITY MATRIX

When you have finished filtering and rearranging the Traceability Matrix to display only the data you want to see, you can print a report of that data.

To print the Traceability Matrix:

1. With the matrix open, select **File > Print** from the menu, or click the **Print** button. The **Project Report Setup** dialog box is displayed.
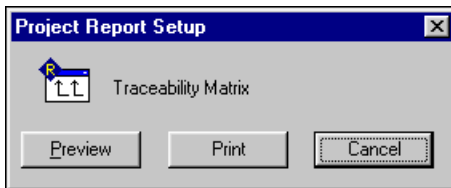
2. If you want to preview the report before printing, click the **Preview** button.

3. Click the **Print** button. Print using normal Windows printing operations.

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Chapter 17: Reports

OVERVIEW

CaliberRM provides seven standard requirement reports: Detail, History, Discussion, Status, Responsibility and Specification that you can preview, print, or export.

Note: CaliberRM also supports the Caliber Document Factory, which enables you to generate customized documents using Word templates.

To generate a CaliberRM report, select **Reports** from the CaliberRM menu, then select the type of report you want to generate.

DETAIL REPORT

The Detail report lists the details of all requirements in the open project or the details of an individual requirement. Details include: name, description, priority, status, owner and user-defined attributes. An example Detail report is shown on the following page.

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*To view the **Detail** report:*

1. Select **Reports > Detail** from the menu. The **Detail Report Setup** dialog box is displayed.

2. Select the requirement type you want to include in the report, or select all types.

3. Select the sort order for the requirements.

4. To export the report, click the **Export** button. See "Exporting Reports" on page 281 for detailed information about the Export feature.

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To preview the report, click the **Preview** button. See "Report Preview" on page 282 for detailed information about the Preview feature.

To print the report, click the **Print** button and follow the normal Windows printing procedure.

HISTORY REPORT

The **History** report lists all requirements in the project with their change history data.

*To view the **History** report:*

1. Select **Reports > History** from the menu. The **History Report Setup** dialog box is displayed as shown on the following page.
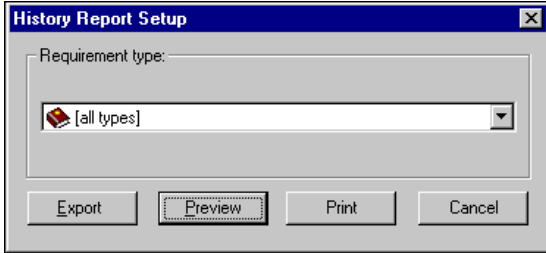
2. Select the requirement type to be included in the report, or select all types.

3. To export the report, click the **Export** button. See "Exporting Reports" on page 281 for detailed information about the Export feature.

   To preview the report, click the **Preview** button. See "Report Preview" on page 282 for detailed information about the Preview feature.

   To print the report, click the **Print** button and follow the normal Windows printing procedure.

DISCUSSION REPORT

The **Discussion** report lists all requirements in the project with their group discussion messages.

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*To view the **Discussion** report:*

1. Select **Reports > Discussion** from the menu. The **Discussion Report Setup** dialog box is displayed.
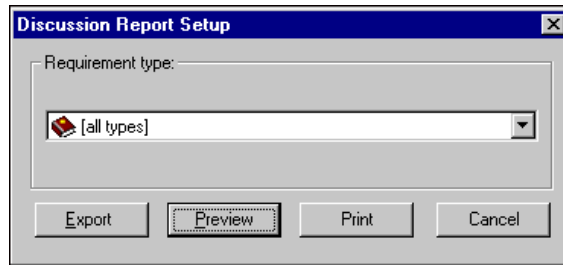
2. Select the requirement type to be included in the report, or select all types.

3. To export the report, click the **Export** button. See "Exporting Reports" on page 281 for detailed information about the Export feature.

   To preview the report, click the **Preview** button. See "Report Preview" on page 282 for detailed information about the Preview feature.

   To print the report, click the **Print** button and follow the normal Windows printing procedure.

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STATUS REPORT

The **Status** report lists all requirements in the project sorted by the status.

*To view the **Status** report:*

1. Select **Reports > Status** from the menu.

   The **Requirements by Status Report Setup** dialog box is displayed.
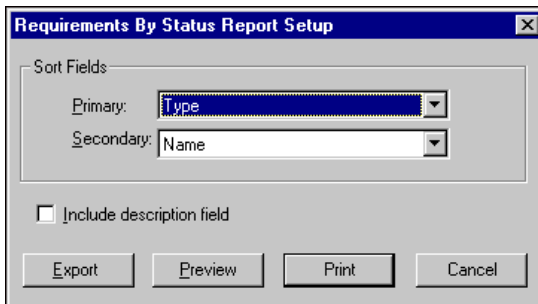
2. Select the primary and secondary sort fields in the drop down lists.

3. If you want the description to be included, select the **Include description field** check box.

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4. To export the report, click the **Export** button. See "Exporting Reports" on page 281 for detailed information about the Export feature.

    To preview the report, click the **Preview** button. See "Report Preview" on page 282 for detailed information about the Preview feature.

    To print the report, click the **Print** button and follow the normal Windows printing procedure.

RESPONSIBILITY REPORT

The **Responsibility** report lists all requirements in the project and is sorted by the responsible user. An example Responsibility report is shown below.

*To view the **Responsibility** report:*

1. Select **Reports > Responsibility** from the menu.

    The **Requirements by Responsibility Report Setup** dialog box is displayed as shown on the following page.

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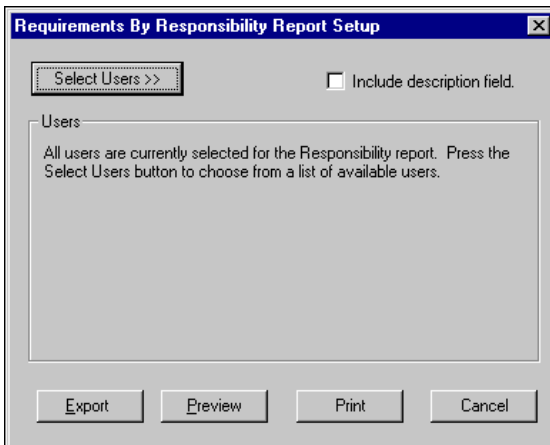
2. Click the **Include description field** check box to include the description text in the report.

3. If you want to include **all** CaliberRM users, go to Step 6.

If you want to select specific users, click the **Select Users** button to display the list of available users.
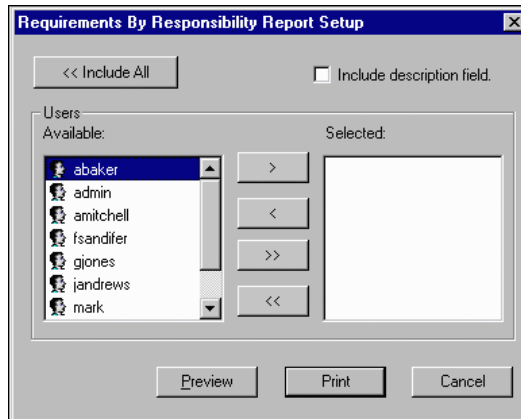
4. Select the users you want to include from the **Available** list.

    *Note: Use the **SHIFT** key to select a range of users, or the **CTRL** key to select multiple users individually.*

5. Click the **Move Right** button.

    *Note: You can move all users in the list by clicking the **Move All Right** button.*

6. To export the report, click the **Export** button. See "Exporting Reports" on page 281 for detailed information about the Export feature.

    To preview the report, click the **Preview** button. See "Report Preview" on page 282 for detailed information about the Preview feature.

    To print the report, click the **Print** button and follow the normal Windows printing procedure.

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SPECIFICATION REPORT

The **Specification** report generates a requirement specification report in Microsoft Word format. You can export that report in Word format. An example Specification report is shown below.
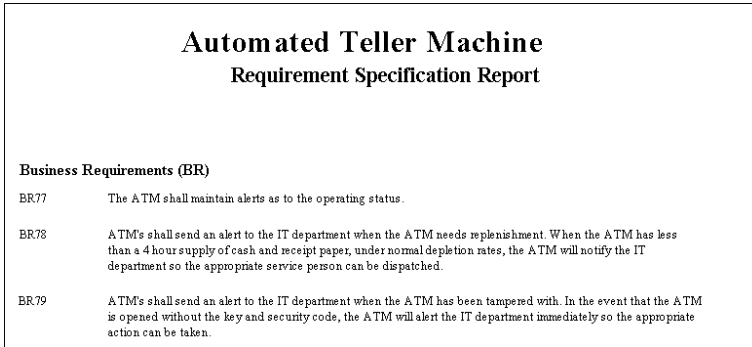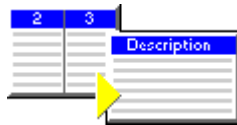
*To view the **Specification** report:*

1. Select **Reports > Specification** from the menu. The **Requirement Specification Report Setup** dialog box is displayed.
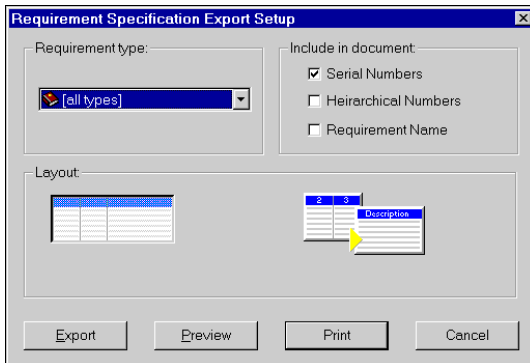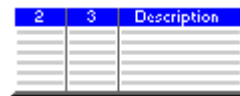
2. Select the **Requirement Type** to be included in the report. The default is **All Types**.

3. Select the appropriate check box to add Serial Numbers, Hierarchical Numbers, and Requirement Names to the report.

4. Select the layout you would like to use:

Outline   *Table*

5. To export the report, click the **Export** button. See "Exporting Reports" on page 281 for detailed information about the Export feature.

   To preview the report data, click the **Preview** button. See "Report Preview" on page 282 for detailed information about the Preview feature.

   To print the report, click the **Print** button and print using the normal Windows printing procedure.

EXPORTING REPORTS

To export reports:

1. In the report **Report Setup** dialog box, click the **Export** button. The **Save As** dialog box is displayed as shown on the following page.

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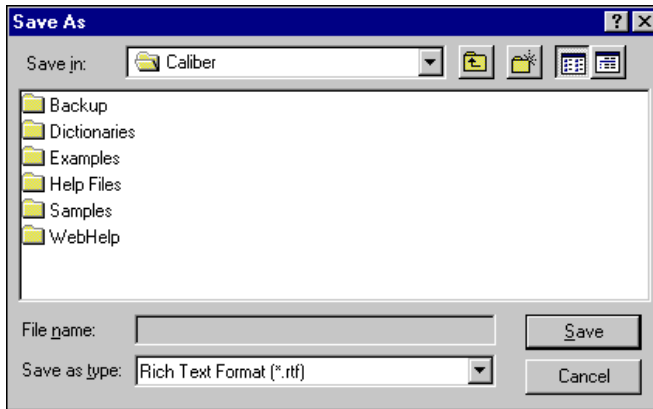
2. Choose a location in which to save your file.

3. Enter a **File name** and **type**.

4. Click **Save**.

When the export is complete, CaliberRM prompts you to open the file.

REPORT PREVIEW

The Report Preview contains several options for viewing your report preview, and allows you to print the data.

The toolbar features (listed in order from left to right) perform the following functions:

> **First Page:** Displays the first page of the report.

> **Previous Page:** Displays the previous page.

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Current Page number: Displays what page is currently being viewed.

Next Page: Displays the next page.

Last Page: Displays the last page of the report.

Cancel: Cancels the loading process of the records.

Print: Displays the **Print** dialog box, which allows you to choose the printer, pages to print and number of copies to print.

Printer Setup: Displays options for setting up your printer.

Magnification: Zooms in or out.

Total: Displays the total number of records in the report.

Percent Read: Displays the percentage of records displayed in the preview.

Records Read: Displays the number of records displayed in the preview.

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Chapter 18: Group Discussion

OVERVIEW

CaliberRM enables project teams to provide feedback on requirements and projects through the **Group Discussion** feature. This collaborative feature enables team members to enter and reply to comments to help define, refine and prioritize requirements.

There are two levels of discussions:

*   **Project** level discussion messages and replies are stored by project on the project Discussion tab.

*   **Requirement** level discussion messages and replies are stored by requirement on the requirement Discussion tab.

PROJECT LEVEL DISCUSSION

Project level discussion is available for each project. You can access it by selecting the project name in the requirement list and clicking the **Discussion** tab. See "Reading a Message" on page 288 for more information about reading messages.

REQUIREMENT LEVEL DISCUSSION

There are three ways to determine that a requirement has an unread discussion item:

*   the unread discussion indicator in the requirement tree

*   the unread discussion list

*   the unread discussion indicator associated with the message entry on the **Discussion** tab

Unread Discussion Indicator

When a requirement has a discussion item that has not been read, an unread discussion indicator is located to the left of the requirement name in the requirement list. When you read the message, the indicator disappears.

Unread Discussion List

The unread discussion list is a list of requirements that have unread messages. You can set CaliberRM to automatically display this list when you open a project.

To set this option:

1. Select **Tools > Options** from the CaliberRM menu. The **Options** dialog box is displayed.

2. Select the **General** tab.

3. Select the **Show unread discussions upon loading projects** check box.

4. Click **OK**.

When you open a project in CaliberRM, the **Unread Discussions** dialog box appears if there are any unread discussions in the project.

Click the header to sort by Requirement or Owner.
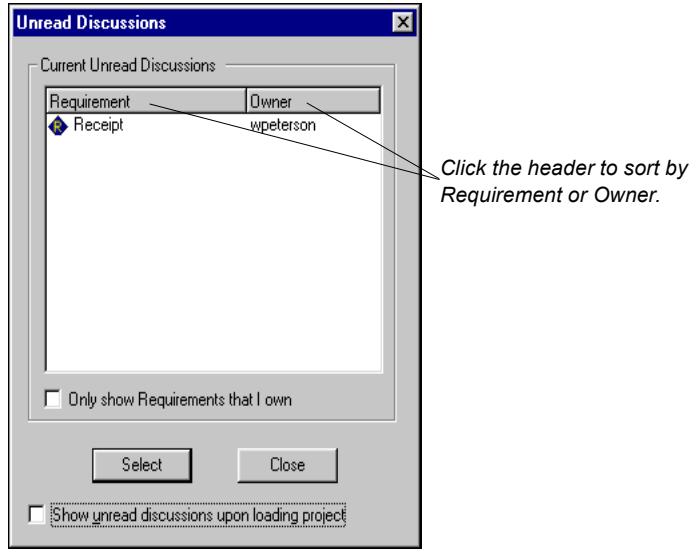
You have the option to sort requirements by name or owner by clicking the header in the **Unread Discussions** dialog box, and see only those that you own by selecting the **Only show Requirements that I own** check box.

To read an unread discussion:

1. Double-click the message you want to read, or select the message in the list, and click the **Select** button.

   CaliberRM displays the requirement with the unread discussion.

2. Select the **Discussion** tab and read the message. For information about reading messages, see "Reading a Message" on page 288.

After reading the message, you may go back to the **Unread Discussion List** and select another requirement.

You can turn off this option at any time by clearing the **Show unread discussions upon loading projects** check box.

Viewing the Unread Discussion List

If you prefer not to have the unread discussions list display automatically upon opening a project, you may still view unread discussions.

To view unread discussions at any time while you are logged into a project in CaliberRM:

1. Select **Tools > Unread Discussions** or press the **CTRL-D** keys. The **Unread Discussion List** dialog box is displayed.

2. Double-click the message you want to read, or select the message in the list, and click the **Select** button.

    CaliberRM goes to the requirement with the unread discussion.

3. Select the **Discussion** tab and read the message.

READING A MESSAGE

The **Discussion** tab displays all messages posted for the selected requirement. You can sort messages in ascending order by subject, author or date by clicking on the appropriate header. Clicking a second time sorts messages in descending order.

Unread messages on the **Discussion** tab have an indicator that is illuminated green. Once you have read the message, the indicator becomes gray.

To read a message:

1. Click the **Discussion** tab for the requirement with the unread message.

2. Select the message you want to view from the list displayed. You can collapse or expand replies by clicking on the plus sign (+) or minus sign (-) to the left of the subject.

    The text of the message is displayed in the message text area as shown on the following page.
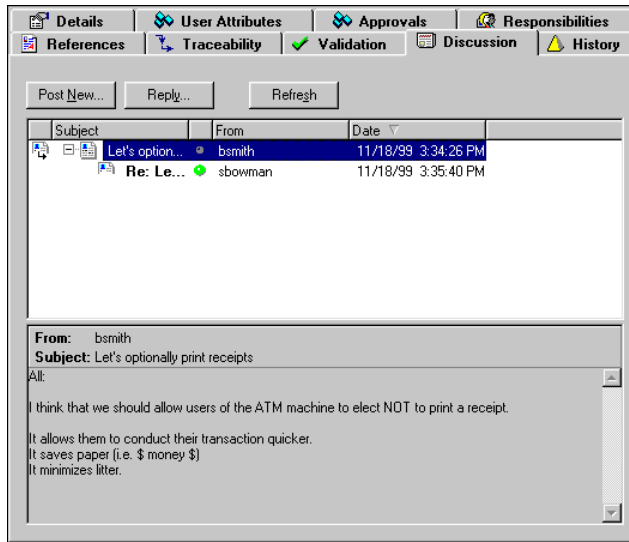
POSTING A NEW MESSAGE

To post a new message:

1. Select the requirement for which you want to post a message.

2. Click the **Discussion** tab.

3. Click the **Post New** button. The **New Message** dialog box is displayed as shown on the following page.

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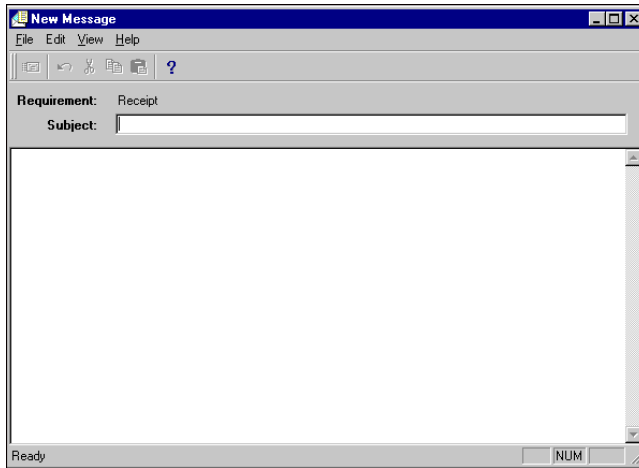
4. Enter a subject in the subject field.

5. Enter a message in the message box.

6. To post your message, select **File > Post Message** from the menu, or click the **Post Message** button. To exit without posting the message, select **File > Close** from the menu.

REPLYING TO A MESSAGE

To reply to a message:

1. Click the **Reply** button. The **New Reply Message** dialog box opens with the subject field filled in automatically.

2. Type your message in the message box.

3. To post your message, select **File > Post Message** from the menu, or click the **Post Message** button. To exit without posting the message, select **File > Close** from the menu.

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UPDATING THE MESSAGE LIST

When you select a requirement, its group discussion list contains all current messages. However, if a message is added while you are in the **Discussion** tab, you may not automatically receive that message.

To update the message list, click the **Refresh** button on the **Discussion** tab.

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Chapter 19: Document References

OVERVIEW

Document references are used by CaliberRM to provide additional information for a requirement. Referenced documents may include a specifications document, meeting notes, a screen shot or anything else that might be of use in defining or understanding requirements.

CaliberRM supports an unlimited number of document references for each requirement, and can support any file type with an associated application, such as Word, Excel, Power Point, graphics files, HTML files, URLs so you can reference a Web site and more. CaliberRM also allows you to enter a text reference, so you can reference a book, periodical, or anything that is not online.

There are two types of document references. Key references and non-key references. A **key reference** might be the source document from which a requirement is derived. You can link text within the reference to become the requirement description. Key references **must** be Word documents. CaliberRM supports Word 97 and 2000. Each requirement can have only one key reference. **Non-key references** are simply supporting documents related to the requirement.

You can copy and paste or drag and drop documents from Windows Explorer or selected Word text into the **References** tab in CaliberRM to create new references.

Note: Document References should be stored on the Network on a shared drive. Users can use a mapped network drive or a universal naming convention (UNC) to access the file.

CREATING A DOCUMENT REFERENCE

To create a document reference for a requirement:

1. Select the requirement for the reference.

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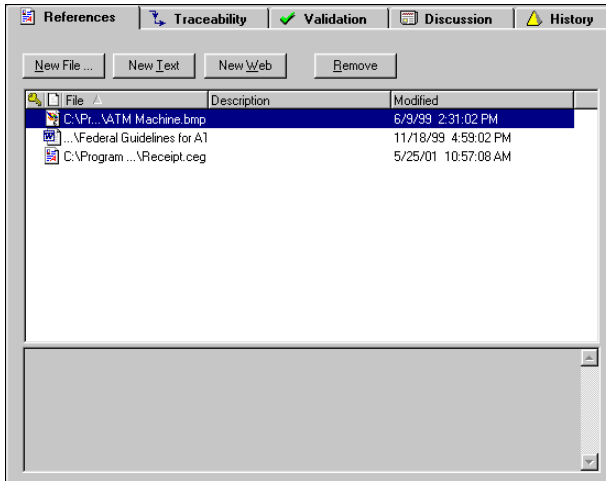
2. Select the **References** tab.

3. Click the **New File** button. The **Add Reference Files** dialog box is displayed.
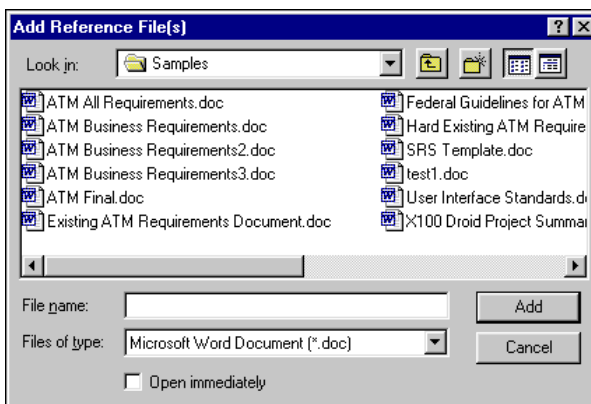
4. Select the file(s) you would like to add.

*Note: If you want to add a file other than a Word document, change the **Files of Type** selection to **All Files**.*

5. Click the **Add** button to add the file(s) to the list.

6. If the reference is a Word or Excel file, you can link to specific text or cells within the document (see "Linking Text Within a Reference" below).

7. To save your changes, select **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To cancel changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

8. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

LINKING TEXT WITHIN A REFERENCE

When you create a reference to a Word document, CaliberRM allows you to link directly to text within that document. When you open the document within CaliberRM, the selected text is displayed automatically, regardless of its location in the document. The text you select becomes the reference description. If the reference is a Word document, and is set as a key reference, this text becomes the requirement description also.

To link document text within a reference:

1. Click the **New File** button. When the **Add Reference Files** dialog box opens, choose a file and select the **Open Immediately** option button.

   OR, if you want to link text within an existing referenced document,

1. Double click the document reference in the list on the **References** tab.

   Word opens in the CaliberRM right window. The CaliberRM toolbar is displayed in the status bar, making both CaliberRM and Word menus available. See the graphic on the following page.

Word menu

CaliberRM
menu
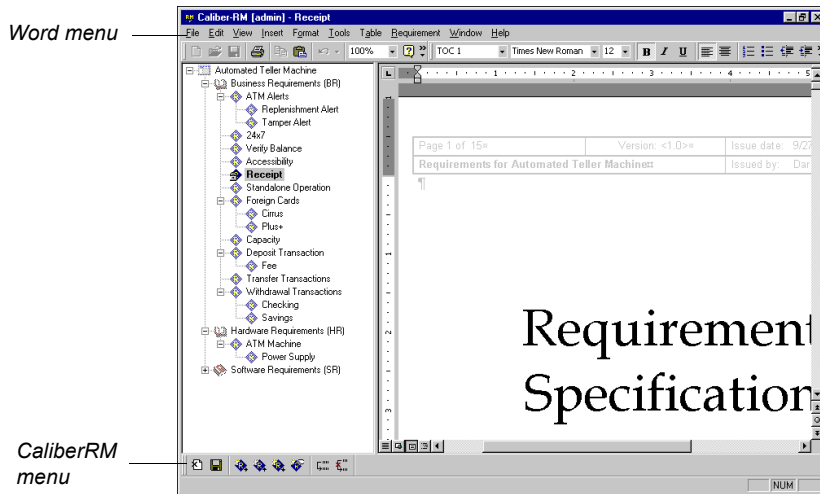
Note: This works the same for Excel files.

2. Select the text in the document to which you want to link.

3. Select **Requirement > New Reference** from the menu, or click the **Create New Reference** button.

Note: To delete a link to document text, select the linked text and select **Requirement > Delete Reference** *from the menu, or click the* **Delete Reference** *button. If you delete a link to text in the document, the reference document is removed from the list.*

4. To save the document, select **File > Save** from the menu, or click the **Save Document** button.

5. To close the document, select **File > Close** from the menu, or click the **Close Window** button in the CaliberRM menu.

The text linked to is displayed as the reference description. If the document is an Excel file, the cells linked to are displayed as the description.

To create multiple links to text in the document, repeat Steps 2 through 4. Each link is displayed as a separate document reference.

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6. To save your changes to the requirement, select **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

7. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

SETTING A DOCUMENT REFERENCE AS THE KEY REFERENCE

When a document reference is set as the key reference, the linked text associated with that reference automatically becomes the requirement description.

Note: The description is not editable when it is a key reference.

To set a document as the key reference:

1. Right click on the document.

2. Select **Set as Key Reference** in the pop-up menu.

   Note: If another document is set as the key reference, the key reference is automatically transferred to the document you have selected.

3. To save your changes to the requirement, select **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

4. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

To clear the key reference, right click on the key reference document and select **Clear Key Reference** from the pop-up menu and save the change.

CREATING A REQUIREMENT FROM A DOCUMENT

CaliberRM allows you to open an existing Word document and create requirements from the document. This is helpful when there are existing requirement documents to be incorporated into a CaliberRM project. When creating a requirement from a document, several options are available:

- creating a requirement with the text specified as a key reference

- creating a requirement with the text specified as a non-key reference

- creating a requirement without a reference to the document

- importing a group of requirements (see "Importing Requirements from Microsoft Word" on page 387 for more information).

WARNING: IF YOU HAVE SPECIFIED THE INITIAL VALUE OF AN ATTRIBUTE AS "FORCE USER TO ENTER VALUE," YOU WILL BE FORCED TO ENTER THIS VALUE FOR EACH REQUIREMENT AS IT IS CREATED, ALLOWING YOU TO CREATE ONLY ONE REQUIREMENT AT A TIME. HAVE YOUR ADMINISTRATOR TEMPORARILY CHANGE THE ATTRIBUTE'S INITIAL VALUE TO "USE DEFAULT VALUE" OR "INHERIT FROM PARENT" BEFORE CREATING MULTIPLE REQUIREMENTS FROM A WORD DOCUMENT.

To create a requirement from within a Word document:

1. Select a requirement type or requirement.

   Note: The new requirement is created as a child of or inserted before/after the selected requirement.

2. Select **File > Open Word Document** from the menu.

   As shown on page 296, Word opens in the right window of CaliberRM, and the menus and toolbars change to Word menus and toolbars. The CaliberRM toolbar is displayed in the status bar making both CaliberRM and Word commands available.

3. Select the text to use as the requirement description.

4. To create the requirement, perform one of these steps:

    •   To create a new requirement without a reference to the document, click the appropriate **Create Requirement** button at the bottom left side of the screen.

    •   To create a new requirement with the selected text as a non-key reference, hold the **SHIFT** key and click the appropriate **Create Requirement** button at the bottom left side of the screen.

    •   To create a new requirement with the selected text as a key reference, hold the **CTRL** key and click the appropriate **Create Requirement** button at the bottom left side of the screen.

    The new requirement is created, and you can create additional links to text within the document.

5. To save the document, select **File > Save** from the menu, or click the CaliberRM **Save Document** button.

6. To close the document, select **File > Close** from the menu, or click the **Close Document** button.

    The selected text becomes the requirement description. You can finish defining the requirement (see "Requirements" on page 211).

7. To save your changes to the requirement, select **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

8. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

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MODIFYING A REFERENCED DOCUMENT

WARNING: MODIFYING A REFERENCED DOCUMENT OUTSIDE OF CALIBERRM MAY AFFECT LINKS. FOR THIS REASON, WE RECOMMEND THAT YOU PLACE ALL DOCUMENTS RELATED TO THE PROJECT IN A SECURE DIRECTORY.

To modify a referenced document:

1. Double click on the document to modify.

    As shown on page 296, Word opens in the right window of CaliberRM, and the menus and toolbars change to Word menus and toolbars. The CaliberRM toolbar is displayed in the status bar making both CaliberRM and Word commands available. If the document is another file type, CaliberRM starts the associated application in a separate window.

2. Make changes to the document as needed.

3. You can link to text or cells in Word or Excel files to specify exactly what to reference (see "Linking Text Within a Reference" on page 295).

4. To save Word or Excel documents, select **File > Save** from the menu, or click the CaliberRM **Save Document** button. Save files of other types within their associated applications.

5. To close Word or Excel documents, select **File > Close** from the menu, or click the **Close Document** button. Close other applications normally.

6. To save your changes to the requirement, select **Requirement > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

7. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

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DELETING A DOCUMENT REFERENCE

Note: Deleting a document reference does not delete the document itself, just the link to it.

To delete a document reference:

1. Select the document reference to remove.

2. Click the **Remove** button on the **References** tab, or right click on the document and select **Remove** in the pop-up menu.

    A message is displayed verifying that you want to delete the reference.

3. Click **Yes** to delete the reference, or **No** to save it.

4. To save your changes to the requirement, select **File > Save Changes** from the menu, or click the **Save Changes** button. To delete changes, select **Requirement > Cancel Changes** from the menu, or click the **Cancel Changes** button.

5. If the **Comment** dialog box is displayed, enter a comment about the change and click **OK**.

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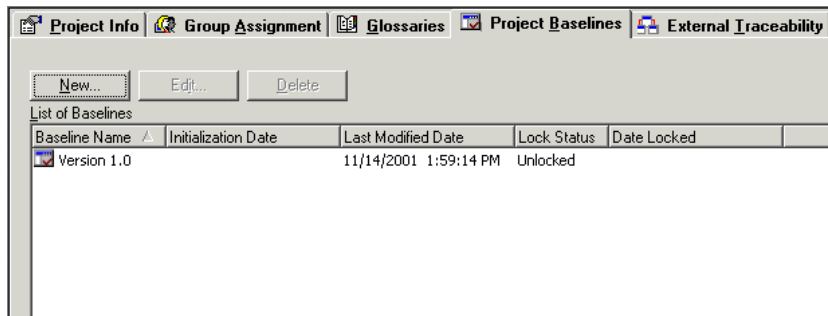
Chapter 20: Baselines

OVERVIEW

Baselines allow you to label a set of requirements at specific versions. Baselining is an option that can be used only if you choose to do so. You must have baseline administrator privileges to create, manage and delete baselines. For instructions on making a user a baseline administrator, see page 79.

CaliberRM also features the Electronic Signature for Baselines functionality. This optional feature allows certain users, called signatories, to electronically sign a locked baseline by entering login credentials. For more information on this feature, see page 313.

You can view baseline information in the Framework Administrator. Select the project that contains the baselines you want to view and select the **Project Baselines** tab.

The tab displays information about each baseline:

•   **Baseline Name:** The name of the baseline.

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- **Initialization Date:** The date and time the baseline was initialized. Dates are displayed using the CaliberRM appearance setting for date format. To change the appearance, select **Tools > Options > Appearance** tab.

- **Last Modified Date:** The date and time of the last modification made to the baseline.

- **Lock Status:** Indicates if the baseline is locked or unlocked. Only a baseline administrator can modify an unlocked baseline. A locked baseline cannot be managed or unlocked.

- **Date Locked:** The date and time the baseline was locked.

CREATING A PROJECT BASELINE

Creating a baseline defines the baseline's characteristics, not its contents.

You can create baselines in CaliberRM or the Framework Administrator.

Creating a Baseline in CaliberRM

In CaliberRM, you must be a baseline administrator to create baselines.

To create a baseline in CaliberRM:

1. Select **File > Baseline Administration > New Baseline**.

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The **New Baseline** dialog box is displayed.
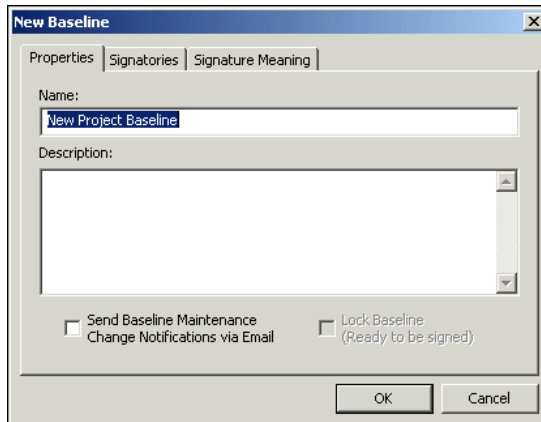
For each baseline, there are three tabs that contain information about the baseline: **Properties**, **Signatories**, and **Signature Meaning**.

2. On the **Properties** tab, enter a name and description for the baseline.

3. If you want all users that are assigned or interested in a requirement to receive email notification when that requirement is added to or removed from the baseline, select the **Send Baseline Maintenance Change Notifications via Email** check box.

   *Note: The **Lock Baseline** check box is disabled when creating a new baseline. It only becomes enabled after you initialize the baseline.*

4. Select the **Signatories** tab.

Note: Baseline signatories are only required if you are using the Electronic Signature for baselines feature. For information, see "Electronic Signatures for Baselines" on page 313.
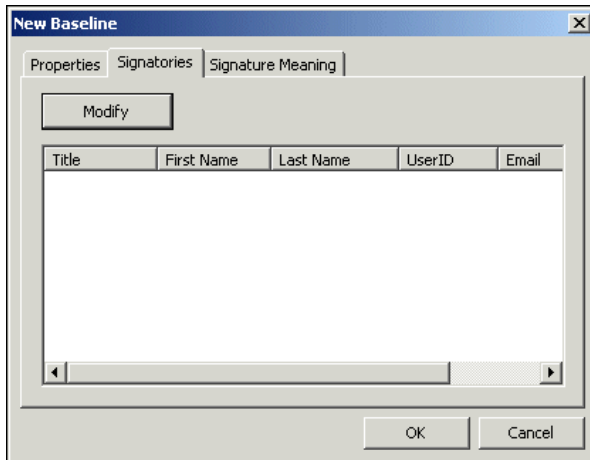
The tab displays a list of people, called **Signatories**, who can sign a locked baseline.

5. Click **Modify** to add users to the list.

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The **Add Baseline Signatories** dialog box is displayed.
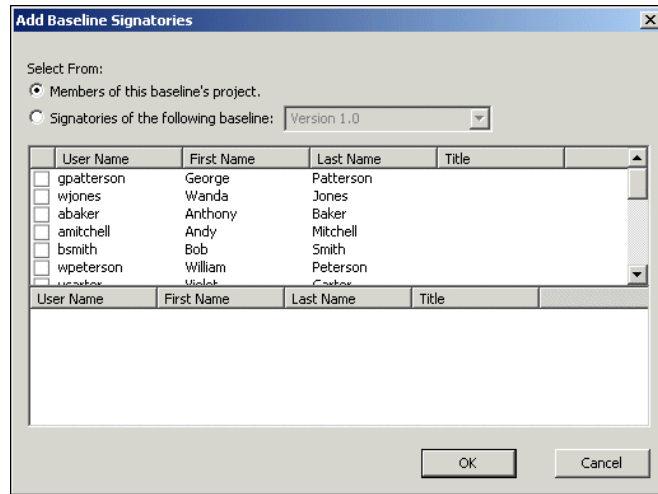
6. Select the users you want to add as signatories for the baseline:

   • To select signatories from existing members of the project, select the **Members of this baseline's project** option button.

   • To select from signatories in an existing baseline, select the **Signatories of the following baseline** option button. The baseline drop-down list is enabled. Select the baseline that contains the signatories you want to add to the new baseline.

   The top pane contains all members of the project or existing signatories from an existing baseline. From this list, select the users you want to add as signatories by selecting the check box next to the user's name. The bottom pane provides a preview of the signatory list.

   *Note: Use the **SHIFT** key to select a range of users, or the **CTRL** key to select additional users.*

7. Click **OK**.

8. Select the **Signature Meaning** tab.

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Note: This step is only required if you are using the Electronic Signature for baselines feature. See "Electronic Signatures for Baselines" on page 313 for more information on this feature.

Click here to create a new signature meaning.

You can also click here.
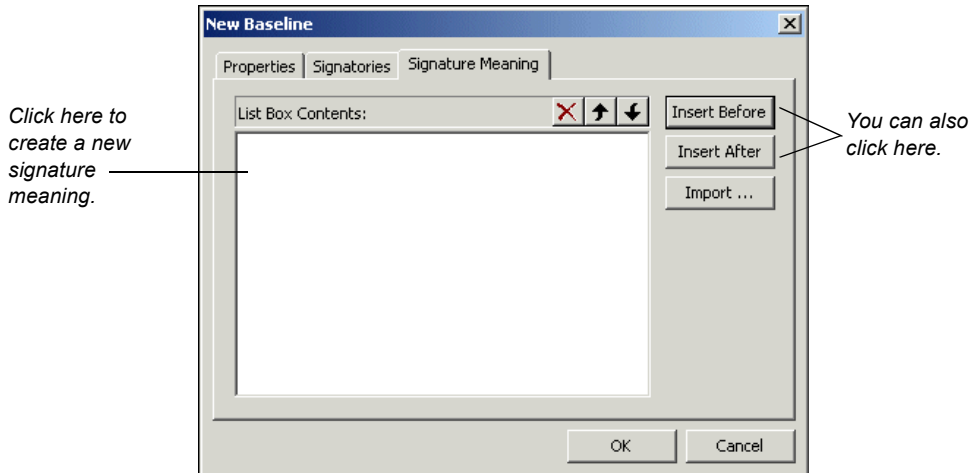
Each baseline has attached to it a list of signature meanings for electronic signatures. Each baseline must contain at least one signature meaning value. When a user "signs" a baseline, he/she selects a signature meaning for the signature. The default signature meaning is **Approved**. All existing baselines created prior to version 5.1 receive the **Approved** signature meaning, and all new baselines default to the **Approved** signature meaning.

*Note: The **Approved** signature meaning does not appear in the list until you select **OK**.*

9. To create a new signature meaning, select a signature meaning in the list, and click either the **Insert Before** or **Insert After** button.

10. Type a name for the signature meaning in the blank list entry. You can rearrange signature meanings in the list by selecting a signature meaning and clicking the **Move Up** or **Move Down** button.

*Note: To delete a signature meaning, select the signature meaning in the list and clicking the **Delete** button. You must have at least one signature meaning. CaliberRM does not allow you to delete the last remaining signature meaning from the list.*

11. You can also import the signature meaning list from another baseline. To do so, click the **Import** button. The **Import Signature Meanings** dialog box is displayed.
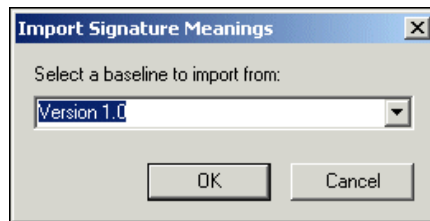
12. Select a baseline from the drop-down list.

13. Click **OK**.

14. Click **OK** to save the new baseline.

15. Click the **Save** button to save the project. The **New Baseline** window closes automatically and the new baseline is listed in the **Baseline** drop-down list on the menu.

Creating a Baseline in Framework Administrator

To create a baseline in the Framework Administrator:

1. Select **View > Projects** from the menu, or click the **Project View** button.

2. Select the project for which you want to add a baseline.

3. Click the **Project Baselines** tab.

4. Click the **New** button. The **New Baseline** dialog box is displayed.

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5. Complete Steps 2 through 15 starting on page 305.

INITIALIZING A BASELINE

Once you have created a baseline, you must initialize it. That is, you have to populate the baseline with requirement information. You must be a baseline administrator to initialize a baseline.

To initialize a baseline:

1. In CaliberRM, select a baseline from the **Baseline** drop-down list or select **File > Open Baseline** from the menu. The **Initialize a Baseline** dialog box is displayed.
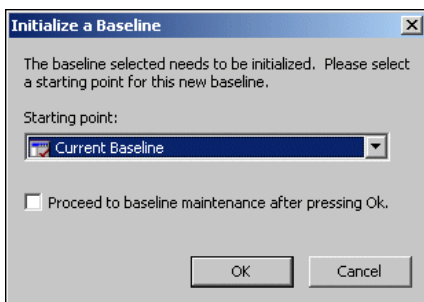
2. Select the desired baseline to initialize from the **Starting point** drop-down list.

3. If you want to baseline the current state of the project without performing baseline maintenance, click **OK**.

4. If you want to perform baseline maintenance, select the **Proceed to baseline maintenance after pressing OK** check box, then proceed to the section "Modifying a Baseline" on page 311.

   Note: When a baseline is initialized or modified, traceability, references, and discussion are not baselined.

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MODIFYING A BASELINE

You may add or remove requirements from a baseline, or change the version of a requirement associated with a baseline. You must be a baseline administrator to modify a baseline.

To modify a baseline:

1. Initialize a baseline as described on page 310.

2. Select **File > Baseline Administration > Baseline Maintenance** from the menu. The **Baseline Maintenance** window is displayed. It contains the requirement tree with check boxes next to the requirements contained in the baseline.
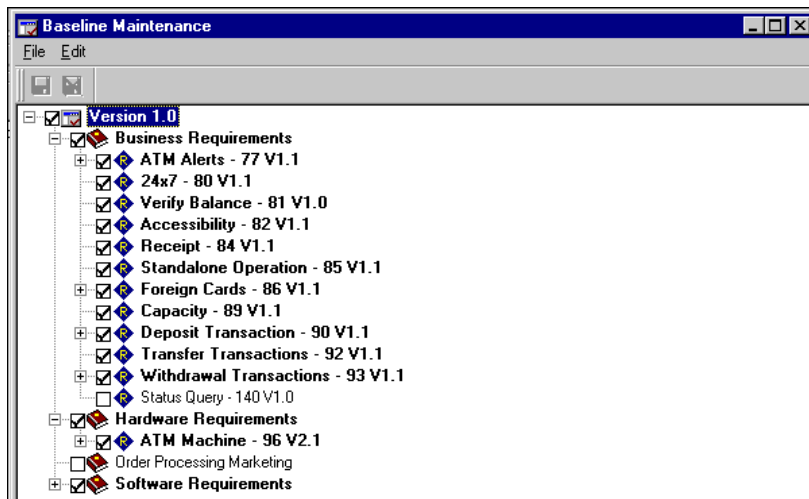
3. Select or clear requirements as desired. Selected requirements are included in the baseline. A check indicates the requirement is selected.

    Note: You can also select a different version of a requirement by right click-ing on it and changing the version number to the version you intend to baseline.

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4. Click the **Save** button to save your modified baseline.

    Note: When a baseline is initialized or modified, traceability, references, and discussion are not baselined.

LOCKING A BASELINE

WARNING! ONCE YOU LOCK A BASELINE, YOU CANNOT UNLOCK IT. THE LOCK BASELINE CHECK BOX BECOMES DISABLED ONCE YOU SELECT IT.

Once you have completed all baseline maintenance, you can lock a baseline. Once you lock a baseline, you cannot make modifications to it. However, signatories can sign the baseline, modify signatures, and assign meanings to it once it is locked. You must be a baseline administrator to lock a baseline.

To lock a baseline:

1. In CaliberRM, select a baseline from the **Baseline** drop-down list or select **File > Open Baseline** from the menu.

2. Select **File > Baseline Administration > Baseline Properties** from the menu. The **Baseline Properties** dialog box is displayed.

3. On the **Properties** tab, select the **Lock Baseline** check box. The **Lock Baseline** warning is displayed.

4. Click **Yes** to lock the baseline, or **No** to cancel the action.

5. Click **OK**. The baseline is locked and the **Lock Baseline** check box becomes disabled.

When a baseline is locked, all signatories for the baseline receive email notification informing them the baseline is ready to be signed. Signatories added after a baseline is locked also receive notification.

DELETING A BASELINE

You must be a baseline administrator to delete a baseline. You cannot delete a locked baseline.

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Note: You must clear the requirements and requirement types from the baseline before the baseline can be deleted. This is accomplished using baseline modification.

To delete a baseline:

1. In the Framework Administrator, select **View > Projects** from the menu or click the **Project View** button.

2. Select the project that contains the baseline you want to delete.

3. Click the **Project Baselines** tab. The baseline list is displayed.

4. Select the baseline you want to delete. The **Delete** button becomes enabled.

5. Click the **Delete** button. A message is displayed verifying that you want to delete the baseline.

6. Click **Yes** to delete the baseline, or click **No** to keep the baseline.

7. Click the **Save** button to preserve the deletion.

ELECTRONIC SIGNATURES FOR BASELINES

Baseline signatures are the electronic equivalent of a "sign off sheet" that is used to approve a set of requirements prior to development work taking place.

Baseline signature functionality is accessed using the CaliberRM **Tools > Baseline Signatures** menu item or clicking the **Baseline Signatures** button.

Selecting this menu item displays the **Baseline Signatures** window.
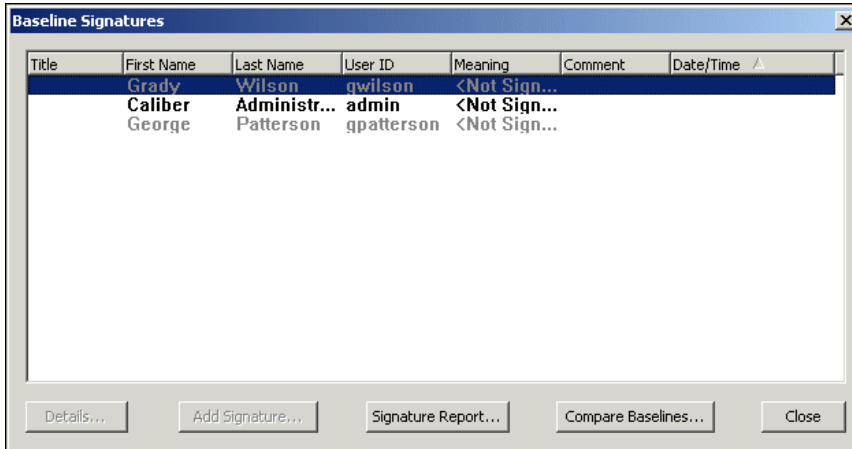
From this window, you can view details about a signed baseline, add a new signature, view and print signature reports, and compare baselines.

Depending on the status of the signature, the signatures are displayed in various colors and font styles:

- If you have signed the baseline, your signature entry is the window text color, usually black. You can double-click the entry to view signature details.

- If you have not signed the baseline your signature entry is the window's text color and bold. You can double-click the entry to add your signature.

- If another user has not signed the baseline, his/her signature entry is gray and bold.

- If another user has signed the baseline, his/her signature entry is the window text color, usually black.

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Adding a Signature

To sign a baseline:

1. In CaliberRM, select a baseline from the **Baseline** drop-down list or select
    File > Open Baseline from the menu.

2. Select **Tools > Baseline Signatures** from the CaliberRM menu. The **Baseline
    Signatures** window is displayed.

3. Click the **Add Signature** button.

    *Note: The Add Signature button is only enabled if the baseline is locked and
    you are a signatory for the baseline.*

    The **New Signature** dialog box is displayed.

4. If you want to add or change your title, enter it in the **Title** box.

5. Assign a **Signature Meaning** to the signature using the drop-down list.

6. In the **Authentication** section, verify your **User ID** and enter your **Password**.

7. If you want to add a comment, enter it in the **Comment** box. The maximum length allowed for a comment is 5000 characters.

8. Click **OK**. The **Baseline Signature** warning dialog box is displayed, verifying that you want to sign the baseline.

9. If you do not want to receive the warning in the future, select the **Do not show this warning in the future** check box.

10. Click **OK**. Your signature now appears in the **Baseline Signatures** window.

Signatories can sign a baseline multiple times, however, once a signature is added it cannot be replaced or deleted.

Signature Details
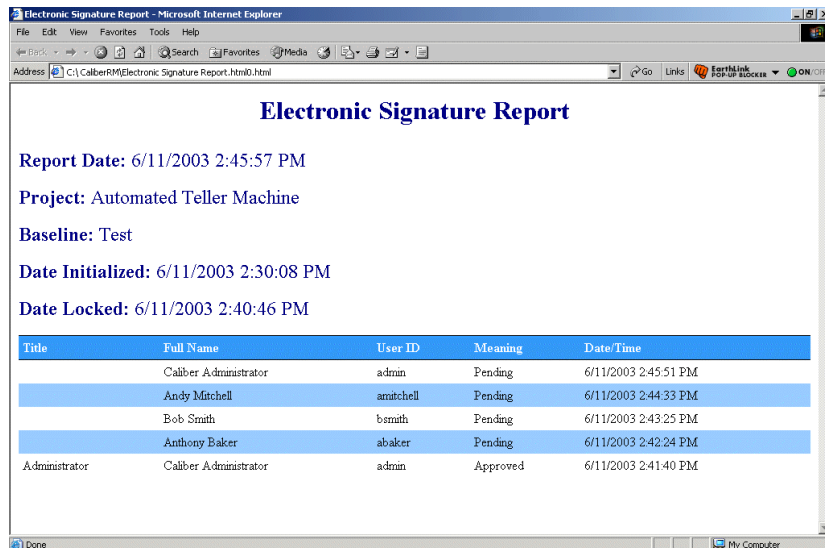
You can view the details of baseline signatures using the **Details** button in the **Baseline Signatures** window. Select a signed baseline in the list and click this button to display the **Baseline Signature** window.

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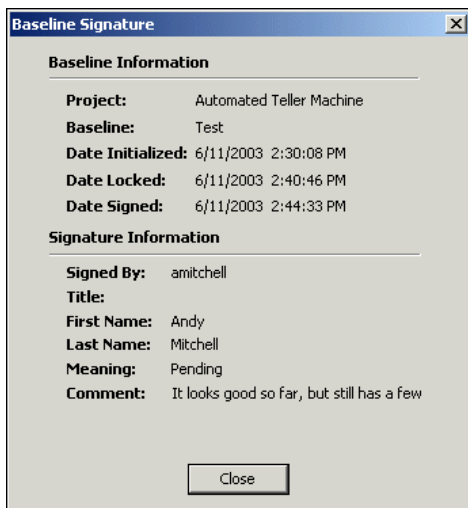
The window displays information about the baseline, such as the project, the version of the baseline, and dates the baseline was initialized, locked and signed. It also displays signature information such as the signatory, the signatory's title, signature meaning and comments.

Signature Reports

You can view a report of a baseline's signatures by selecting the **Signature Report** button in the **Baseline Signatures** window. The report is launched in your web browser.

The report is sorted using the same sort order as the signature list in the Baseline Signatures window.

You can also view signature information in reports using the CaliberRM Document Factory. See page 343 for more information on this feature.

COMPARING BASELINES

You can compare baselines to review baseline changes or project progress.

To compare two baselines:

1. Select **Tools > Compare Baselines** from the menu. The **Compare Baselines** dialog box is displayed.

   Note: You can also access the Compare Baselines dialog box by selecting ***Tools > Baseline Signatures****, then clicking the* **Compare Baselines** *button in the* **Baseline Signatures** *window.*
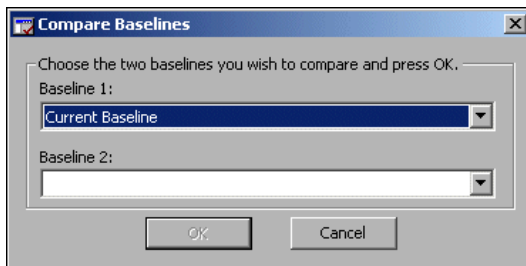
2. Select the two baselines you want to compare from the respective drop-down lists.

3. Click **OK**. A comparison of the baselines is displayed in an .html file, shown on the following page.

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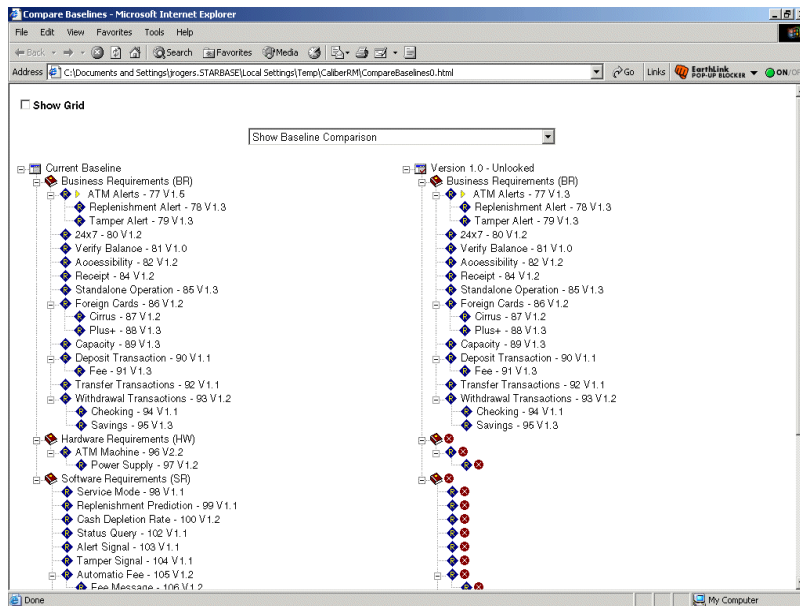
You can select one of three ways to view the data:

- **Show Baseline Comparison:** Displays differences according to the hierarchical structure of the requirements.

- **Show Only Baseline Differences Grouped by Requirement Type:** Displays differences by Requirement Type.

- **Show Only Baseline Differences Grouped by Difference Type:** Displays differences by Difference type.

  - **Missing:** A requirement exists in one baseline, but not the other.

  - **Moved:** A requirement has been moved.

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- **Moved and Versioned:** A requirement has been moved and is a different version.

- **Versioned:** A requirement is a different version.

4. You can print the report by selecting **File > Print** and following normal Windows printing procedure.

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Chapter 21: Requirement Viewer

DRAG-AND-DROP FILE CREATION

CaliberRM allows you to use a drag-and-drop operation to create a file shortcut from a requirement. The file shortcut is created by dragging a requirement outside of the requirement tree window and dropping it into any window that accepts an Object Linking and Embedding (OLE) file (e.g., Microsoft Word or a web browser such as Internet Explorer or Netscape Navigator, etc.).

The file created is identified by the RM icon and has the requirement's name as the file name and a .crm file name extension.

The file contains the ServerName, ProjectID and RequirementID.

You can also use a drag-and-drop operation to move a previously created .crm file into a project. To move a .crm file, click on the file and drag and drop it into the desired location in the requirement tree.

You can select the directory in which the file is placed by selecting **Tools > Options** from the CaliberRM menu and modifying the file location specified on the **Clipboard** tab.

*Note: Depending on where the file is dropped, a link may be created to the location where the .crm file was actually created (i.e. the destination location listed above).The **Windows Temp Directory** is the default location for the .crm files.*

When you double click on a .crm file, CaliberRM is launched and the requirement is displayed. You can also reassociate your .crm files to automatically launch the Requirement Viewer.

REQUIREMENT VIEWER

Requirement Viewer is a utility that can open a .crm file and provides a "quick view" of a requirement.

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Note: Although it is not necessary to log in as a CaliberRM client to use Requirement Viewer, you must be logged on to the CaliberRM server where the .crm file is located.

STARTING REQUIREMENT VIEWER

To launch the Requirement Viewer:

1. Navigate to the location where you installed CaliberRM. The default location is C:\Program Files\Borland\CaliberRM.

2. Locate the CaliberRMViewer.exe file and double-click it. The **Requirement Viewer** window is displayed.
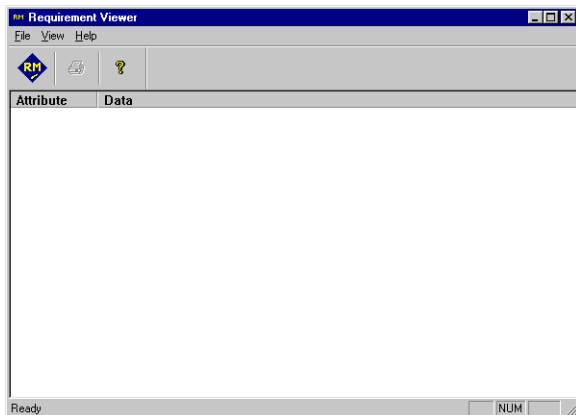
3. Open a .crm file by selecting **File > Open Requirement**.

4. The Open dialog box is displayed. Navigate to the location of the .crm file you want to open. Click **Open**.

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When you open the selected file, the requirement information is displayed.
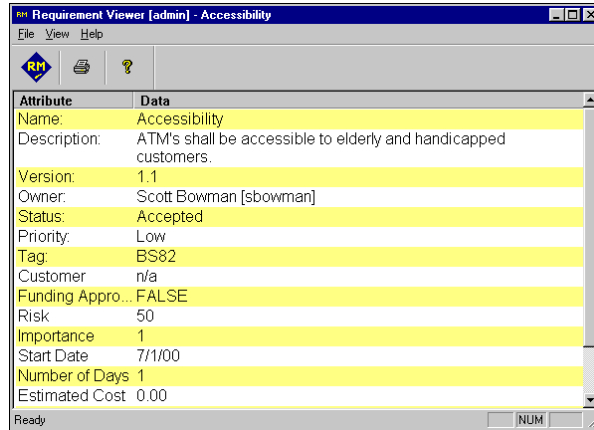
From this window, you can:

- Launch CaliberRM by selecting **File > Launch CaliberRM**, or by clicking the **Launch CaliberRM** toolbar button. CaliberRM starts and with the project containing the specified requirements open and the requirement selected.

- Print the requirement by selecting **File > Print**, or by clicking the **Print** button, and use the standard Windows print features.

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- Customize the look of the requirement by selecting **View > Customize Fonts**. You can use this option to set the character formats and color for each requirement label and data.
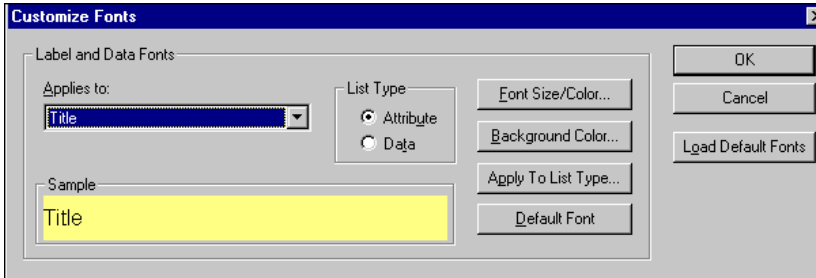
- **Font size Color:** opens a standard Windows character formats dialog

- **Background Color:** provides choices for the background color of the selected display

- **Apply To List Type:** displays a dialog box that allows you to apply font and background color shown in the **Sample** display to all fields of the selected List Types.

- **Default Font:** resets the format of the selected **Sample** display to 12 point Arial with alternating yellow and white background color

- **Load Default Fonts:** resets all samples to 12 point Arial with alternating yellow and white background color.

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Chapter 22: Document Factory

The Caliber Document Factory enables you to generate any type of up-to-date, customized specifications documents using Microsoft Word templates. In Word, you can create templates containing fields that correspond to CaliberRM requirement attributes. You can then use the Caliber Document Factory to populate the template with data from any project. Using filter criteria in the template fields, you can even specify what requirement data is included in the document. Document Factory generates .doc, .txt and .rtf files.

HOW DOCUMENT FACTORY WORKS

The first step in generating a Document Factory document is to create a Microsoft Word template. Templates contain any printable data you want to appear in the document including column headers, labels and page numbers. Templates also contain Document Factory commands, keywords and operators.

- Commands control the selection, order and grouping of the requirements in the document.

- Keywords are placeholders that correspond to CaliberRM project and requirement information. They specify the data that is put into the document. They **must** be entered into a template **exactly** as they appear in CaliberRM.

- Operators allow you to apply very specific criteria when searching for groups of requirements.

You can format your template to create the look you desire including tables of contents, headers and footers and page numbers. You can apply most character and paragraph formatting available in Word to the entire template, including the keywords. When the template is complete, you can run Document Factory to populate the template with data from a project.

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There are several sample templates included with CaliberRM. If installed, they are located in **Program Files\Borland\CaliberRM\Samples** (or where you installed CaliberRM). There are also many sample templates and output in "Document Factory Sample Templates and Outputs" on page 443.

COMMANDS

Document Factory uses a set of special commands referred to as $Commands to populate and format the document. The $Commands are non-printing and do not appear in the completed document. Some commands, like $Begin_list/$End_list, are used in pursuant process lists of information, such as a list of traceability links or a list of users responsible for a requirement. $Commands alone do not cause data to be placed in the document. They must be used in conjunction with keywords.

Note: $Commands are not case sensitive, and uppercase letters are not required for proper operation; however, adopting a formatting style and using it consistently adds to the readability of your templates.

Function	Usage	See...	Purpose
$PROJECT{ }	Optional	page 329	Specifies the project name for the document.
$BASELINE{ }	Optional	page 329	Specifies the baseline to be used for the document.
$BEGIN_SECTION	Required	page 330	Marks the beginning of a section. Most commands must be enclosed in a $BEGIN_SECTION/ $END_SECTION command.
$END_SECTION	Required	page 330	Marks the end of a section. Must be used with $BEGIN_SECTION.

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Function	Usage	See...	Purpose
$FILTER{ }	Optional	page 331	Specifies that only data that meets the criteria specified by its arguments is included in the section.
$SORT{ }	Optional	page 334	Specifies the order requirements are sorted.
$INDENTION_LEVEL{ }	Optional	page 335	Specifies the maximum number of levels a section will be indented.
$INDENTION_SIZE{ }	Optional	page 335	Specifies how far, in inches, each level is indented.
$BEGIN_LIST	Optional	page 336	A command loop used with keywords to produce lists. Data is pre-formatted.
$END_LIST	Optional	page 336	Marks the end of a list. Must be used with $BEGIN_LIST.
$BEGIN_HISTORY	Optional	page 336	A command loop used with history revision keywords. Allows you to format the data.
$END_HISTORY	Optional	page 336	Marks the end of the history revision loop. Must be used with $BEGIN_HISTORY.
$BEGIN_CHANGES	Valid only if $BEGIN_ HISTORY/ $END_ HISTORY is used	page 336	A command loop used with history changes keywords. Allows you to format the data.
$END_CHANGES		page 336	Marks the end of the history changes loop. Must be used with $BEGIN_CHANGES.
$BEGIN_TRACES( )	Optional	page 337	A command loop used with the traceability keywords. Allows you to format the data.

Function	Usage	See...	Purpose
$END_TRACES	Optional	page 337	Marks the end of the traceability loop. Must be used with $BEGIN_TRACES.
$CALCULATE{ }	Optional	page 339	Performs calculations on specified keywords.
$BEGIN_DISCUSSIONS	Optional	page 340	A command loop used to format requirement discussion data. Used with discussion keywords.
$END_DISCUSSIONS	Optional	page 340	Marks the end of the requirement discussion loop. Must be used with $BEGIN_DISCUSSIONS.
$BEGIN_PROJECT_ DISCUSSIONS	Optional	page 341	A command loop used to format project discussion data. Used with discussion keywords.
$END_PROJECT_ DISCUSSIONS	Optional	page 341	Marks the end of the project discussion loop. Must be used with $BEGIN_PROJECT_ DISCUSSIONS.
$BEGIN_GLOSSARY	Optional	page 341	A command loop used to include glossary information. Used with glossary keywords.
$END_GLOSSARY	Optional	page 341	Marks the end of the glossary loop. Must be used with $BEGIN_GLOSSARY.
$RGVFile	Optional	page 342	A command loop used to apply a Requirement Grid filter within a section.

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Function	Usage	See...	Purpose
$BEGIN_SIGNATURES	Optional		A command lool used to include baseline signature information. Used with signature keywords.
$END_SIGNATURES	Optional		

$PROJECT{ }

This command specifies the project to be used for the document. If you are creating a project specific template you may want to include this command in your template. If you do not include this command in your template, Document Factory prompts you to choose a project. The project name must appear the same as it does in the project drop-down list.

Note: Only one project may be specified in a template.

Syntax

$PROJECT{Automated Teller Machine}

$BASELINE{ }

This command specifies the baseline used for the document. If a baseline is not specified, the current version of requirements is used. If you specify a baseline, it must be initialized in CaliberRM before Document Factory can reference it. The name must appear as it does in the Baseline drop-down list.

Syntax

$BASELINE{Version 2}

$BEGIN_SIGNATURES/$END_SIGNATURES

You can include baseline signature information in Document Factory using these commands in conjunction with baseline keywords. The $Begin_Signatures/ $End_Signatures command should **only** be used **outside** of a $Begin_Section/ $End_Section loop. See page 354 for a list of $Begin_Signatures/$End_Signatures keywords.

Syntax

$BEGIN_SIGNATURES

<<first_name>><<last_name>>, <<title>>
<<signature_date>>
<<meaning>>
<<comment>>

$END_SIGNATURES

$BEGIN_SECTION/$END_SECTION

These commands are used together to specify a section. A section typically contains a set of requirements of the same requirement type, but sections can be based on other criteria as well. The arguments in the $Filter command determine the group of requirements included in a section. If you do not filter on a particular set of requirements, Document Factory uses all requirements in the project. The keywords that can be used in a section are listed on page 345.

Rules about a section

- A template may contain many sections; however, you can not have a section within a section.

- All $Commands except $Project and $Baseline must be used within in a $Begin_section/$End_section command.

- There can be only one instance of each type of command in a section.

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Syntax

> **$BEGIN_SECTION**
>
> **$FILTER{type = 'Business Requirements'}**
>
> **$SORT{hierarchy}**
> **$INDENTION_LEVEL{.3}**
> **$INDENTION_SIZE{.5}**
>
> **$BEGIN_LIST**
> **<<references>>**
> **<<responsibilities>>**
> **$END_LIST**
>
> **$CALCULATE{keyword1 * keyword2 as result}**
>
> <<name>>(<<tag>><<id_number>>)
> <<description>>
> <<traces>>
> <<history>>
>
> **$END_SECTION**

$FILTER{ }

The $Filter command is used to specify the group of requirements included in a section. It **must** be the first command in the section. If no $Filter is used, Document Factory includes *all* requirements in the project.

$Filter commands are expressed as:

expression1 *compare operator* expression2 where:

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Expression1 is one of the following keywords:

type	status
tag	priority
id_number	hierarchy
version	user-defined attributes

Compare operator is one of the following operators:

Operator	Meaning	Examples
=	Equals	priority = high
>	Greater than	risk > 50
<	Less than	number of days < 30
>=	Greater than or equal to	risk >= 75
<=	Less than or equal to	total time <= 10
<>	Not equal to	owner <> asmith
Like	Matches a pattern	name like *xxx*
Not Like	Does not match a pattern	tag not like 'BR'
Between	In a range	limit between 10 and 50
Not Between	Not within a range	total not between 5 and 10
In	In a set	number in ('1,2,3)
Not In	Not in a set	serial not in (88,89,90)

Expression2 is a *keyword value* expressed as:

- **Text string:** expressed as *'Business Requirements'*

- **Numbers**: integers or float expressed as *Number of Days = 50*

- **Dates:** expressed as *date = #11-22-01#*

- **Boolean:** expressed as *yes* or *no*, no quotes

You can use wild cards in searches that use the *like* condition. The wild card characters are listed below:

Character	Meaning	Examples
* (asterisk)	A string of characters of any length, or possibly no characters	ser* String beginning with ser
? (question mark)	One character	'???d' Four characters ending with a d
# (pound sign)	One digit	'a?## String starting with an a, followed by one letter and two digits
[a-g]	Range of characters	'[m-s]##' String starting with a letter between m and s, followed by two digits
[!a-g]	Outside a range of characters	'[!m-s]' String starting with a letter before m and after s.
[*] or [?] or [#]	Placing a special character in brackets means to take it literally rather than giving it a special meaning	

You can combine search conditions by using the following logical operators:

- **and** – both expressions must be true to return a value

- **or** – either condition must be true to return a value

Syntax

```
$BEGIN_SECTION
$FILTER{type = 'Business Requirements'}
$END_SECTION
```

Other examples of $Filter commands are shown below:

$FILTER{priority = 'high'}

$FILTER{status <> 'accepted'}

$FILTER{priority = 'high' and status = 'accepted'}

$FILTER{owner = 'smith' or owner = 'abaker'}

$FILTER{date = #11-22-01# and status = 'accepted'}

$FILTER{risk between 50 and 100}

$SORT{ }

The $Sort command determines the order in which requirements appear in a section. Keywords used as arguments in the $Sort command can be labeled as ASC for ascending order or DESC for descending order. Ascending is assumed if neither is specified.

Syntax

```
$BEGIN_SECTION
$FILTER{type = 'Business Requirements'}
$SORT{hierarchy}
$END_SECTION
```

The $Sort command can also be used as shown in the examples below:

$SORT{priority}

$SORT{priority, start date, owner}

$SORT{priority ASC, start date DESC}

If multiple arguments are used in the sort list, requirements are sorted first by the first argument in the list. If there are multiple requirements meeting that criteria, they are then sorted by the second argument, and so on.

The following keywords can be used in a sort command:

type	status
tag	priority
id_number	hierarchy
version	user-defined attributes

*Note: You **cannot** sort on: description, validation, references, responsibility, traces, text-field UDAs, User List UDA, Group List UDA or Multiple Selection List UDA.*

$INDENTION_LEVEL{ } AND $INDENTION_SIZE{ }

If $Indention_Level is specified, requirements in the section are indented according to their hierarchy in the tree. $Indention_Level specifies the maximum levels deep the section is indented. $Indention_Size specifies how many inches each indent is. As projects may contain many hierarchical levels, it is a good idea to limit the number of indents. These commands can only be used in conjunction with a $Sort{hierarchy}command.

The syntax is shown on the following page.

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Syntax

$BEGIN_SECTION
$FILTER{type = 'Business Requirements'}
$SORT{hierarchy}
$INDENTION_LEVEL{3}
$INDENTION_SIZE{.5}
$END_SECTION

$BEGIN_LIST/$END_LIST

The $Begin_List/$End_List command provides a **pre-formatted** display of data that appears in list format in CaliberRM. This applies to <<references>>, <<responsibilities>>, and Multiple Selection User-Defined Attributes. Using these keywords without enclosing them between the $Begin_List/$End_List commands results in the data presented in a comma delimited format. The keywords used with this command are listed on page 347.

Note: You can still format the information with bolding, underlining, etc.

Syntax

Responsibilities:
$BEGIN_LIST
<<responsibilities>>
$END_LIST

$BEGIN_HISTORY/$END_HISTORY and $BEGIN_CHANGES/ $END_CHANGES

A history record contains two sets of lists: a list of revisions and a list of changes for each revision. Two command loops are required to process the lists in the history record. $Begin_History/$End_History instructs Document Factory to loop through the history revision list, while $Begin_Changes/$End_Changes loops through the list of changes for each revision. Using this set of commands, you can

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customize the content and the look of the history data in your document. The keywords used with these commands are listed on page 348.

Syntax

```
$BEGIN_SECTION
$FILTER{type = 'Business Requirements'}
$SORT{hierarchy}
 $BEGIN_HISTORY
 Rev#:<<major_version>><<minor_version>>User:<<userid>>
 Name:<<user_name>>
 <<Comment>>
   $BEGIN_CHANGES
   Changed Field:<<field_changed>>
   From:<<from_value>> To:<<to_value>>
   $END_CHANGES
 $END_HISTORY
$END_SECTION
```

$BEGIN_TRACES/$END_TRACES( )

You can customize the content and the look of the traceability data in your document by using the $Begin_Traces/$End_Traces command.

$Begin_Traces/$End_Traces takes a string of identifiers that specify the trace and object types to be included in the document. There are three categories of identifiers:

- **Trace direction:** *to* or *from* traces

- **Trace type:** direct or implied

- **Object type:** requirement, TestDirector (*to* traces only), Select Enterprise and SCM

The option string can contain a combination of identifiers. The identifiers can be in any order and separated by any type of separator.

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If no option string is supplied, Document Factory assumes the following default:

$BEGIN_TRACES(TO_TRACES,FROM_TRACES,DIRECT_TRACES, ALL_OBJECTS)

The table below details the trace identifiers.

Identifier	Description
TO_TRACES	To traces
FROM_TRACES	From traces
DIRECT_TRACES	Direct traces
IMPLIED_TRACES	**Direct** and **implied** traces
REQUIREMENT_OBJECTS	Requirement objects
TD_SET_OBJECTS	TestDirector sets
TD_TEST_OBJECTS	TestDirector tests
TD_TEST_IN_SET_OBJECTS	TestDirector test in set objects
TD_STEP_OBJECTS	TestDirector step objects
TD_STEP_IN_SET_OBJECTS	TestDirector step in set objects
SE_BUSINESS_PROCESS_OBJECTS	Select Enterprise Business Process Objects
SE_PACKAGE_OBJECTS	Select Enterprise Package Objects
SE_CLASS_OBJECTS	Select Enterprise Class Objects
SE_CLASS_METHOD_OBJECTS	Select Enterprise Class Method Objects
SE_USE_CASE_OBJECTS	Select Enterprise Use Case Objects
SCM_OBJECTS	SCM objects

Identifier	Description
RBT_OBJECTS	CaliberRBT objects
ALL_OBJECTS	All objects

The data extracted for each object is determined by the keywords used within the command. The applicable keywords are listed on page 349.

Syntax

```
$BEGIN_SECTION
  $BEGIN_TRACES(TO_TRACES,FROM_TRACES,DIRECT_TRACES,ALL_OBJECT
    <<Trace_Name>>       <<Trace_Direction>>          <<Trace_Suspect>>
  $END_TRACES
$END_SECTION
```

$CALCULATE{ }

The $Calculate command instructs Document Factory to perform a mathematical calculation on the specified keywords. The arguments to $Calculate must be formatted as **keyword1 [*+-/] keyword2 as result**. *Keyword1* and *keyword2* are separated by an operator (multiply, add, subtract, divide), then the word "as" followed by the result. *Result* is any name that you want to use. It can then be used elsewhere in the document like a keyword to display the results of the calculation.

There can be only one $Calculate command in a section, but you can specify several calculations in one $Calculate command separated by commas.

The syntax is shown on the following page.

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Syntax

```
$BEGIN_SECTION
 $CALCULATE{days + overtime hours as total_time}
 Number of hours: <<total_time>>
$END_SECTION
```

$BEGIN_DISCUSSIONS/$END_DISCUSSIONS

You can format the content of your requirement discussion information using the $Begin_Discussions/$End_Discussions command and certain keywords. You can also use the $Indention_Level and $Indention_Size for indenting discussions. See page 352 for a list of $Begin_Discussions/$End_Discussions keywords.

Syntax

```
$BEGIN_SECTION
 $FILTER{type = 'Hardware Requirements'}

 <<hierarchy>><<name>>( <<tag>><<id_number>>)

 Project Discussions:
 $BEGIN_DISCUSSIONS
 Tag: <<discussion_req_tag>>
 Subject: <<subject>>
 From: <<from>>
 Is Read: <<is_read>>
 Date: <<discussion_date>>
 Body: <<body>>
 $END_DISCUSSIONS

 $END_SECTION
```

$BEGIN_PROJECT_DISCUSSIONS/$END_PROJECT_DISCUSSIONS

You can format the content of your project discussion information using the
$Begin_Project_Discussions/$End_Project_Discussions command and certain
keywords. You can also use the $Indention_Level and $Indention_Size for
indenting discussions. See page 315 for a list of $Begin_Project_Discussions/
$End_Project_Discussions keywords.

*Note: The $Begin_Project_Discussions/$End_Project_Discussions command
does not have to be used in a $Begin_Section/$End_Section.*

Syntax

$PROJECT{Automated Teller Machine}
Project name: <<project>>
 Project description:
<<project_description>>

Project Discussions:
$BEGIN_PROJECT_DISCUSSIONS
Subject: <<subject>>
From: <<from>>
Is Read: <<is_read>>
Date: <<discussion_date>>
Body: <<body>>
$END_PROJECT_DISCUSSIONS

$BEGIN_GLOSSARY/$END_GLOSSARY

You can format the content of your glossary information using the
$Begin_Glossary/$End_Glossary command and certain keywords. See page 353
for a list of $Begin_Glossary/$End_Glossary keywords.

The syntax is shown on the following page.

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Syntax

$PROJECT{Automated Teller Machine}
User name: <<userid>>   Project name: <<project>>
Project description: <<project_description>>

$Begin_Glossary
Term: <<Term>> Definition: <<Definition>>
$End_Glossary

$RGVFILE

You can apply a Requirement Grid filter to your Document Factory reports using the $RGVFile command. If a $Filter command is used in the same section as the $RGVFile command, Document Factory combines the two queries. If a $Sort command is used in the same section as the $RGVFile command, the resulting document will display data from both commands, in an order determined by which command is used first in the template.

When using the $RGVFile command, you do not need to specify the project in the template. Document Factory will use the project specified in the .rgv file you are using. If you do specify a project in the template, it must be the same project in the .rgv file.

The syntax is shown on the following page.

Syntax

$BEGIN_SECTION
**$RGVFILE{C:\Program Files\Borland\CaliberRM\ATM-Accepted Reqs
Sorted by Priority.rgv}**

<<hierarchy>><<name>>(<<tag>><<id_number>>)

$END_SECTION

KEYWORDS

Keywords are placeholders in the template that correspond to specific fields in a
CaliberRM project. Document Factory replaces the keyword in the template with
the actual data from its corresponding field. Some keywords correspond to a single
entry, while others correspond to lists of data. Keywords must be enclosed by
brackets, e.g. <<hierarchy>>.

Keywords are also used as arguments to some $Commands. When used as
arguments, keywords are not enclosed in brackets.

*Note: User-defined attributes that have names identical to CaliberRM keywords
cannot be used in a document. To avoid conflicts, these keywords should not be
used as attribute names.*

Global Keywords

The following keywords are global, meaning they can be used anywhere in the
document, including headers and footers:

Keyword	Description
<<project>>	The name of the project
<<project_description>>	The description of the project
<<userid>>	The ID of the user creating the document

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The graphic on the following page shows how the global keywords relate to the fields in CaliberRM.

<<userid>>

<<project>>

<<project_description>>
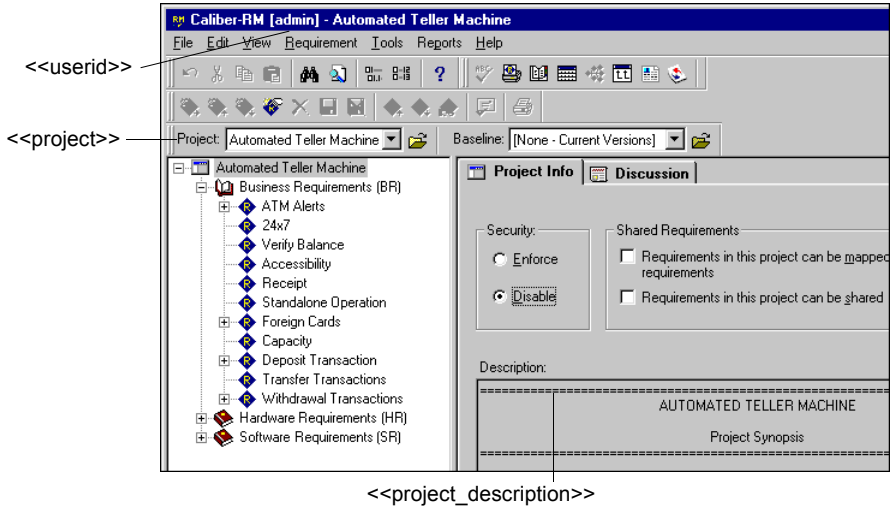
$BEGIN_SECTION/$END_SECTION Keywords

The following keywords are specific to requirements and can **only** be used in a section.

Keyword	Description
<<type>>	The name of the requirement type
<<hierarchy>>	The requirement hierarchy number
<<id_number>>	The unique ID number
<<status>>	The requirement status
<<priority>>	The requirement priority
<<description>>	The requirement description
<<tag>>	The tag for the requirement type
<<name>>	The requirement name
<<version>>	The project version number
<<owner>>	The requirement owner
<<validation>>	The validation procedure
<<UDA Name>>	Any user-defined attribute; these **must** be entered **exactly** as they appear in CaliberRM
<<Calculated Field Name>>	Result of a $Calculate command
<<history>>	All history data for a requirement
<<traces>>	All traceability data for a requirement
<<references>>	The drive, directory and the file link for all the document references assigned to a requirement
<<responsibilities>>	The list of all users responsible for the requirement

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Keyword	Description
<<created_by>>	The userid of the user who created the requirement
<<created_on>>	The date/time that the requirement was created

The graphic below shows how the $Begin_Section/$End_Section keywords relate to the fields in CaliberRM.

A. <<type>>   F. <<description>>
B. <<hierarchy>>   G. <<tag>>
C. <<id_number>>   H. <<name>>
D. <<status>>   I. <<version>>
E. <<priority>>   J. <<owner>>

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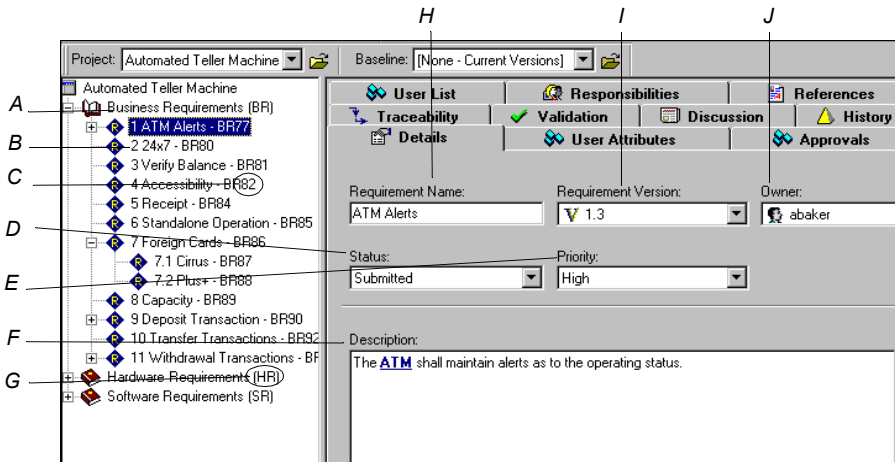
$BEGIN_LIST/$END_LIST Keywords

The following keywords are used to generate lists of information.

Keyword	Description
<<references>>	Used within a $Begin_List/$End_List command; extracts the document reference list for a requirement, found on the **References** tab.
<<responsibilities>>	The keyword is used within a $Begin_List/ $End_List command; extracts the responsibilities list for a requirement, found on the **Responsibilities** tab.
Multiple Selection User-Defined Attributes	Any multiple selection user-defined attribute can be used in a $Begin_List/$End_List command.

$BEGIN_HISTORY/$END_HISTORY Keywords

The **<<history>>** keyword extracts **all** history data for a requirement.

$Begin_History/$End_History scans each entry in the revision list and extracts data for the keywords specified in the template.

These keywords can **only** be used within the $Begin_History/$End_History command loop.

Keyword	Description
<<major_version>>	Major version number
<<minor_version>>	Minor version number
<<datestamp>>	Date of the change
<<timestamp>>	Time of the change
<<userid>>	Logon ID of user who made the change

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Keyword	Description
<<user_name>>	First and last name of user who made the change
<<comment>>	Reason for the change

$BEGIN_CHANGES/$END_CHANGES Keywords

$Begin_Changes/$End_ Changes scans each entry in the changes list and extracts data for the keywords specified in the template.

These keywords can **only** be used within the $Begin_Changes/$End_Changes command loop.

Keyword	Description
<<field_changed>>	attribute - what changed
<<from_value>>	old attribute value
<<to_value>>	current attribute value

The graphic below shows how the commands and keywords relate to the fields on the **History** tab in CaliberRM.

Revision List

A. << major_version>>
B. <<minor_version>>
C. <<datestamp>>
D. <<timestamp>>
E. <<userid>>
F. <<user_name>>
G. <<comment>>
H. <<field changed>>
I. <<from_value>>
J. <<to_value>>

Changes List

History

Rev #:	Date/Time:	Changed by:	Comment:
A, B	*C* *D*	*E,F*	*G*
2.0	5/2/00 9:33:03 AM	Caliber Administrator approved	

Attribute:	Changed from:	Changed to:
Technical App... FALSE		TRUE
H	*I*	*J*
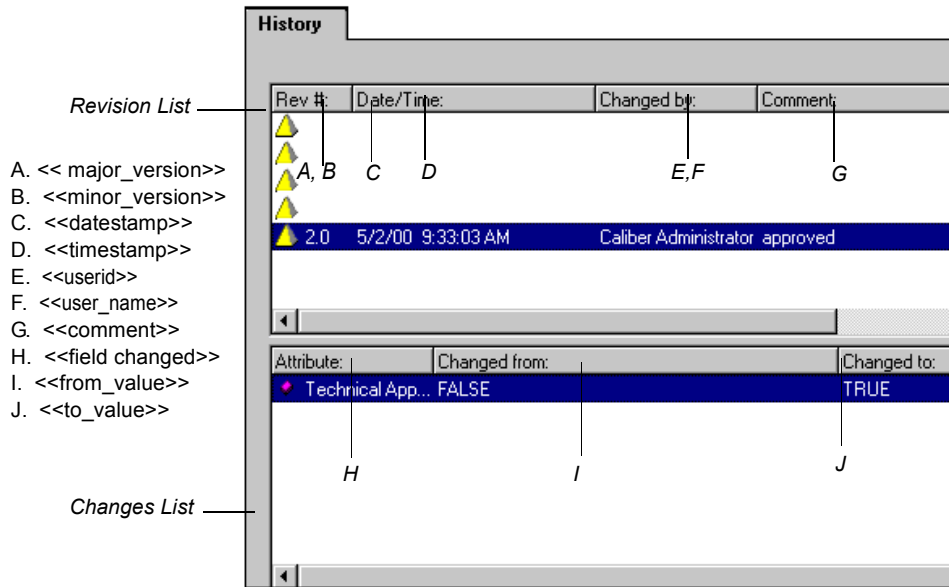
$BEGIN_TRACES/$END_TRACES Keywords

The **<<traces>>** keyword extracts **all** trace data for a requirement.

The following keywords are used to extract and format specific data, and can only be used within a $Begin_Traces/$End_Traces command.

Keyword	Description
<<Trace_ReqTag>>	tag number of trace to or from object
<<Trace_Name>>	name of trace to or from object

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Keyword	Description
<<Trace_Suspect>>	indicates whether the trace is suspect
<<Trace_TestStatus>>	indicates pass/fail status (TD Only)
<<Trace_DirectImplied>>	indicates whether the trace is a direct or implied trace
<<Trace_Direction>>	indicates the direction of the trace
<<Trace_Project>>	the project in which the requirement being linked *to* or *from* is located

The graphics on the following page show how the commands and keywords for traceability relate to the traceability fields in CaliberRM on the **Traceability** tab and in the **Traceability Matrix**.

The <<traces>> keyword extracts all trace data for a requirement.

$Begin_Traces/ $End_Traces scans each entry and extracts data for the keywords specified in the template.

A. <<trace_name>>
B. <<trace_direction>>
C. <<trace_reqtag>>
D. <<trace_teststatus>>
E. <<trace_suspect>>
F. <<trace_project>>
G. <<trace_directimplied>>

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$BEGIN_DISCUSSIONS/$END_DISCUSSIONS Keywords

The **<<discussions>>** keyword extracts the list of **all** requirement discussions. Data includes the requirement tag, discussion subject, the user who initiated the discussion and the discussion date.

Note: The <<discussions>> keyword does not have to be used within a $Begin_Discussions/$End_Discussions command loop.

The following keywords are used to extract and format specific data, and can **only** be used within a $Begin_Discussions/$End_Discussions command.

Keyword	Description
<<discussion_req_tag>>	the requirement identifier; includes the type tag and id
<<subject>>	the subject of the discussion
<<from>>	user who initiated the discussion
<<is_read>>	indicates if current user has read the discussion
<<discussion_date>>	date the discussion was saved
<<body>>	the message text of the discussion

$BEGIN_PROJECT_DISCUSSIONS/$END_PROJECT _DISCUSSIONS Keywords

The **<<project_discussions>>** keyword extracts the list of **all** project discussions. Data includes the discussion subject, the user who initiated the discussion and the discussion date.

Note: The <<project_discussions>> keyword does not have to be used within a $Begin_Project_Discussions/$End_Project_Discussions command loop.

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The keywords below are used to extract and format specific data, and can **only** be used within a $Begin_Project_Discussions/$End_Project_Discussions command loop.

Keyword	Description
<<subject>>	the subject of the discussion
<<from>>	user who initiated the discussion
<<is_read>>	indicates if current user has read the discussion
<<discussion_date>>	date the discussion was saved
<<body>>	the message text of the discussion

$BEGIN_GLOSSARY/$END_GLOSSARY Keywords

The **<<glossary>>** keyword extracts a pre-formatted list of glossary information. This keyword outputs all glossaries assigned to the selected project in their specified order. Data includes glossary terms and their definitions.

*Note: The **<<glossary>>** keyword should not be used within a $Begin_Section/ $End_Section command loop.*

*Note: The **<<glossary>>** keyword does not have to be used within a $Begin_Glossary/$End_Glossary command loop.*

The following keywords are used to extract and format specific data, and can **only** be used within a $Begin_Glossary/$End_Glossary command.

Keyword	Description
<<glossary_name>>	the name of the glossary
<<term>>	the term

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Keyword	Description
<<definition>>	the term's definition

$BEGIN_SIGNATURES/$END_SIGNATURES Keywords

These keywords can **only** be used within the $Begin_Signatures/$End_Signatures command loop.

The **<<signatures>>** keyword used alone produces a pre-formatted list of baseline signatures formatted as:

<<signature_date>><<signature_time>><<first_name>><<last name>><<meaning>>

Keyword	Description
<<title>>	the signatory's title
<<first_name>>	the signatory's first name
<<last_name>>	the signatory's last name
<<user_id>>	the signatory's user ID
<<meaning>>	the signature meaning
<<comment>>	the signatory's comments
<<signature_date>>	the date the baseline was signed
<<signature_time>>	the time the baseline was signed

CREATING TABLES IN DOCUMENT FACTORY

Once you are familiar with commands, keywords, and creating Document Factory templates, you may want to include more complex formatting, such as tables.

Tables provide a neat, efficient way to display your output data. You can include tables in your Document Factory documents by adding tables to your templates.

Refer to the following example as a guideline for creating tables in Document Factory.

1. Start with a simple template, like the example shown below.
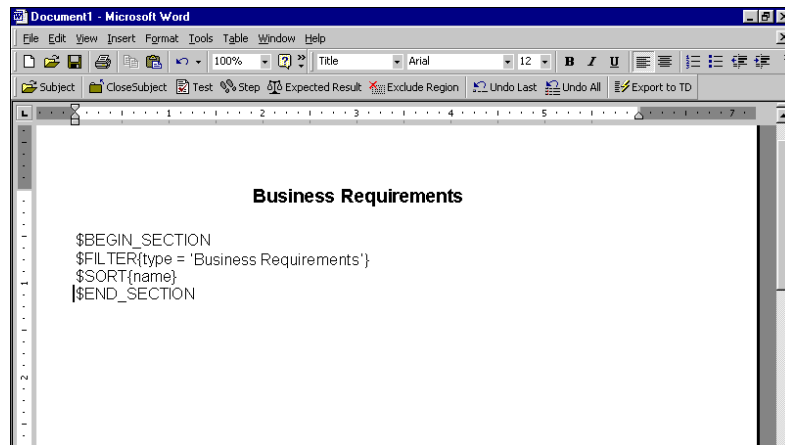
2. Place your cursor before $End_Section. Select T**able > Insert > Table** from the menu. Add a two row table with three columns.

3. Add $Begin_Section through $Sort (including the space after $Sort) to the first column of the second row.

From this to this
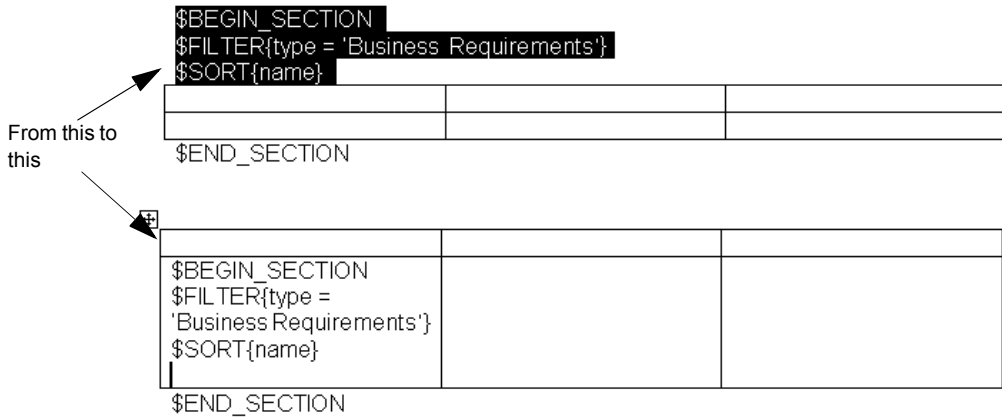
4. Add column headings and corresponding attribute keywords, as displayed in the graphic on the following page. In the example, <<name>>, <<status>> and <<description>> are used.

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Note: The column headings and attributes are highlighted only to show you where they are placed.
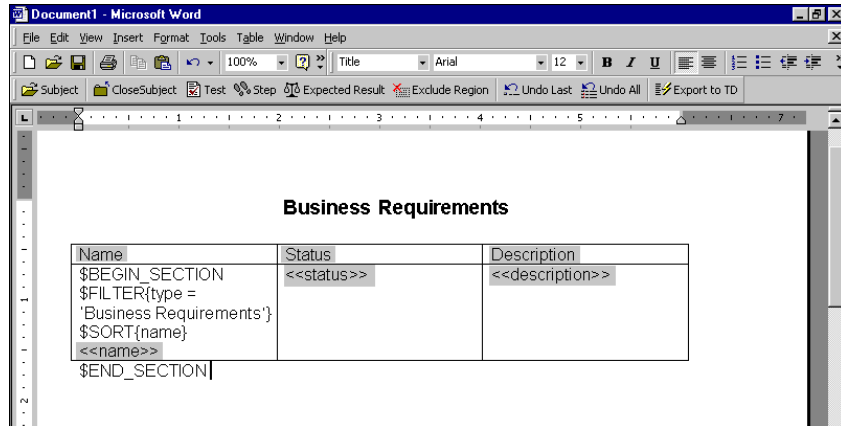

5. Select **Tools > Options** from the menu. On the **View** tab, under **Formatting Marks**, select the **Paragraph marks** check box. Click **OK**.

6. Highlight the paragraph mark after the $Sort statement. Select **Format > Font** from the menu. On the **Font** tab, under **Effects**, select the **Hidden** check box. Click **OK**. The <<name>> keyword moves up to the $Sort line.

   Note: If you do not hide the last paragraph mark, each requirement is printed in a single row table.

7. Repeat Step 5 to hide the remaining paragraph marks.

8. Select the entire first (heading) row and select **Table > Heading Rows Repeat** from the menu. This ensures that each new page has a heading row.

9. Select the second row and select **Table > Table Properties** from the menu. On the **Row** tab, make sure that the **Allow row to break across pages** check box is **not** selected. Click **OK**.

10. Click **File > Save As** from the menu. Save your document as a .dot file, which you can use to run Document Factory.

    The final template and its output are shown on the following page.

FINAL TEMPLATE
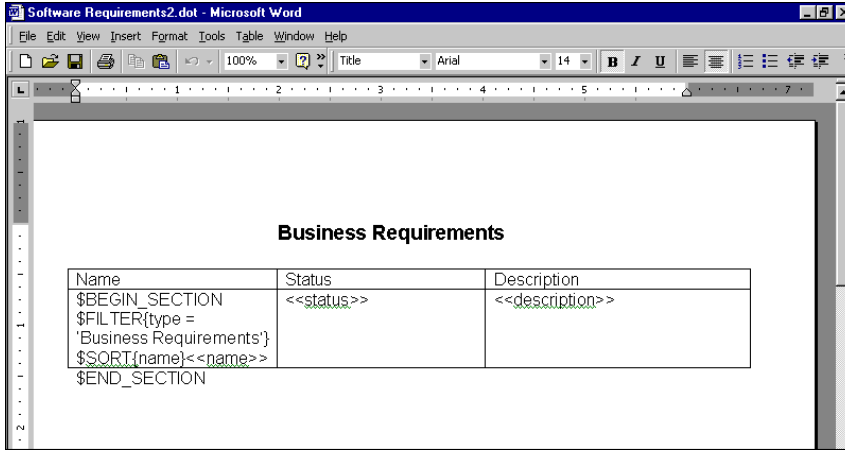
OUTPUT
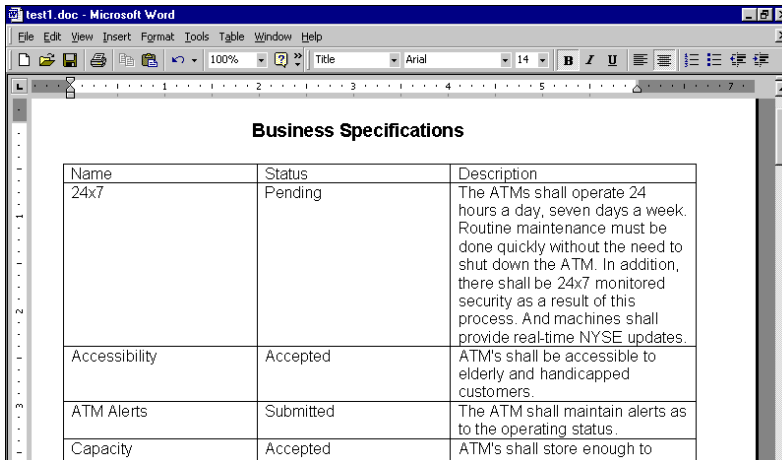
CREATING A DOCUMENT USING DOCUMENT FACTORY

To create a document using Document Factory:

1. To start Document Factory, do one of the following:

   • select **Programs > CaliberRM > Caliber Document Factory** from the Windows **Start** menu,

   • click the **Document Factory** button on the StarTeam toolbar,

   • click the **Document Factory** button on the CaliberRM main toolbar, or

   • select **Tools > Document Factory** from the menu.

   If you are already logged on, go to Step 3. If you are not logged on, Caliber Document Factory prompts you to log on.

2. Enter your **Server** name, **User Id** and **Password** and click **Next**.

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3. Step 2 of the Caliber Document Factory is displayed.
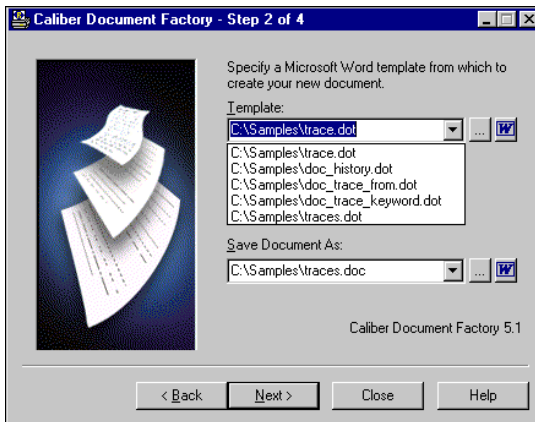
Select a file from the list in the **Template** box. The drop-down list allows you to make a selection from the most recently used templates. By default, there are five files in the list. This number is determined by your administrator.

OR

Click the **Browse** button to navigate to the desired template file. The default location is **C:\Program Files\Borland\CaliberRM\samples.**

You can open the selected template to check it or make any edits before running Document Factory. Click the **Word** icon next to the **Template** box to open the selected template file in Microsoft Word.

4. In the **Save Document As** box, enter a path and name for your new document, click the **Browse** button to navigate to a previously created document or leave blank.

You can open the selected Word file by clicking the **Word** icon next to the **Save Document As** box.

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5. Click **Next**. Step 3 of the Caliber Document Factory is displayed.
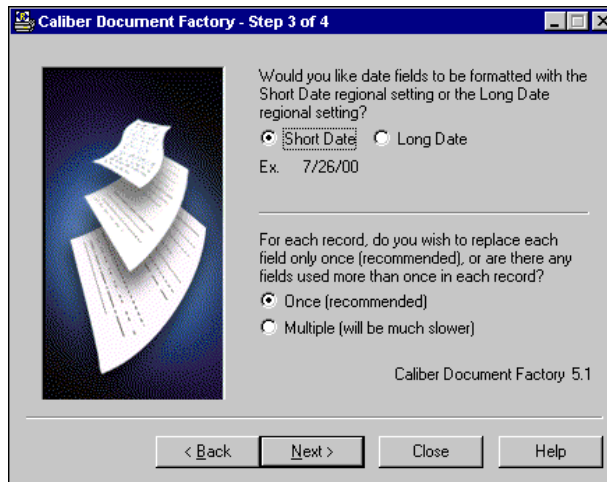
6. Choose the date format that you would like to use: **Short Date** or **Long Date**.

7. Choose **Once** for the method of replacing fields if the template contains only one occurrence of each keyword used. This option replaces only the first instance of the keyword.

    If you use a keyword more than once in a section, choose the **Multiple** option to replace all occurrences of the keyword with the actual data. This option replaces all instances of the field, but takes longer to process the data.

8. Click **Next**. Step 4 of the Caliber Document Factory is displayed.
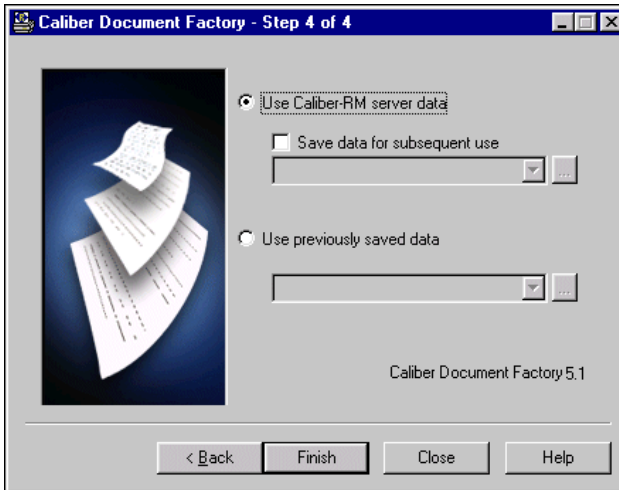
9. Choose the data from which you would like to create the document:

   • Use data from the active project. If you choose this option, you can also choose to save the current data to use again with a different template.

   • Use previously saved data.

10. Click **Finish**.

The Caliber Document Factory processes the data.
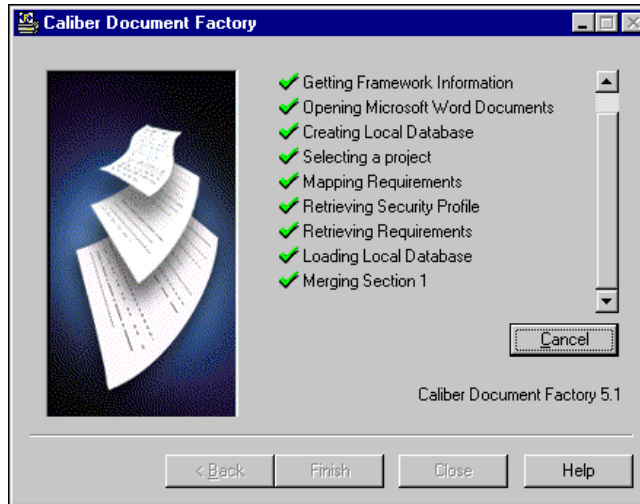
Note: If you used a template that was not project-specific, you are asked to choose the project during this processing phase.

11. When the data has been processed, the CaliberRM Document Factory asks if you would like to open your document.

RUNNING DOCUMENT FACTORY FROM THE COMMAND LINE

Document Factory can be run from the MS-DOS command line, allowing you to set up scheduled document generation. For example, you can set Document Factory to produce a detailed specifications document at the end of every month, or a high-level report of requirement status at the end of every week.

1. Select **Start** > **Programs** > **Command Prompt** to get to a DOS command prompt.

2. At the C:\> prompt enter: **cd Program Files\Borland\CaliberRM**, to change the directory to where the *Docfactory.exe* file resides.

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Note: Change directory to that of your CaliberRM executable file if different from above.

3. At the prompt, enter the following command:

    docfactory /Project <*project*> /Template <*template*> /SaveAs <*filename*>
    /Merge <o> /Date <s> /Server <*server*> /User <*user*>
    /Password <*password*> /Auto <*YES/NO*>

where:

/Project <project>: The name of the project. If the project name consists of more than one word separated by spaces, the name must be enclosed in double quotes, e.g. "Automated Teller Machine".

/Template <template>: The path and name of the template.

/SaveAs <filename>: The path and name of the file to save as. This file may be a .doc, .txt or .rtf file. If the project name consists of more than one word separated by spaces, the name must be enclosed in double quotes.

/Merge <o>: Indicates the merge method used. The <o> instructs Document Factory to replace the fields just once (the default). Using <m> replaces multiple fields.

/Date <s>: Instructs Document Factory to use the Short Date format. If not specified, Document Factory uses the Long Date format.

/Server <server>: The name of the CaliberRM server to obtain the data from.

/User <user>: The user ID to use for logging on to the server.

/Password <password>: The user password.

/Auto <YES/NO>: Instructs Document Factory to not just fill in the values for you, but to actually run the Document Factory and terminate when complete. If you enter no, you will get the Document Factory screens.

Example:

docfactory /Project "Automated Teller Machine" /Template ATM.dot

/SaveAs ATM.doc / Merge o /Date s /Server dagobah /User asmith

/Password mypass /Auto YES

Chapter 23: Web Access

OVERVIEW

CaliberRM has two tools that enable customers to manage their requirements using the Web – CaliberRM Web and CaliberRM WebView. Each of these tools allow project teams to connect to a CaliberRM server through a standard browser.

Note: To use either CaliberRM Web or CaliberRM WebView, you may be required to download the Java Plug-In.

CALIBERRM WEB

CaliberRM supports a full-featured browser-based Web client **except** the following:

- All CaliberRM administrator functionality (**File > Admin**)

- Traceability Matrix (**Tools** menu)

- Reports (**Reports** menu)

- Document Factory (CaliberRM System Toolbar and **Tools** menu)

- Export to Access (**File > Export to Access**)

- Importing Documents from MicroSoft Word (**File > Import from Word)**

- Custom Tools (**Tools > Options**)

- Drag and Drop requirements out of CaliberRM

- External integrations are limited to read-only data. For example, TestDirector objects appear in the Traceability Diagram and Traceability Tab. You can right-click on a TestDirector object and view its details. However, you can not create new traces.

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USING CALIBERRM WEB

To access CaliberRM Web:

1. Open a standard browser such as Netscape Navigator or Internet Explorer.

2. Enter the name or IP address of the server you want to connect to in the **Address** or **Location** field, depending on your browser. You may browse the URL of the Web server where Caliber RM Web is installed instead if you prefer.

    Note: If your Caliber Administrator has changed the location of the CaliberRM Web index page or has moved the links to a custom page, you need to enter that location instead.
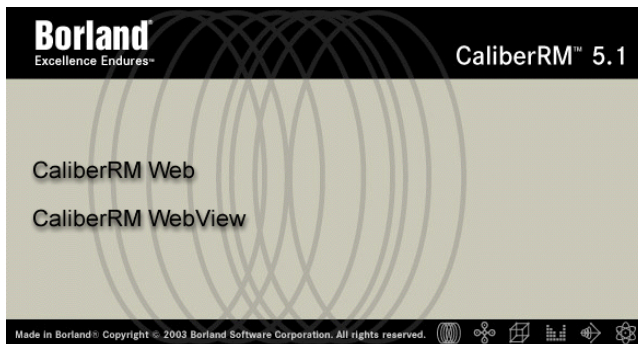
    The CaliberRM Web index page is displayed.

Download Java Runtime Environment

3. Click the **CaliberRM Web** link.

    Note: You may be required to download the Java Plug-In.

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The first time you attempt to use CaliberRM Web, the following window is displayed.

4. Click the **Always** button. The **Login** screen is displayed.
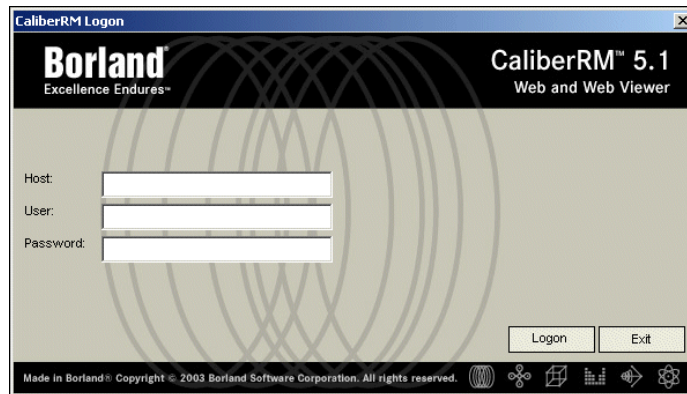
5. Enter your CaliberRM server **Host**, your **User** name and **Password** in the appropriate fields.

6. Click **Logon**. The system verifies your information, and logs you on to the server.

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You are now in CaliberRM Web and can perform most of the tasks you can perform in the standard CaliberRM client.

Refer to page page 367 for a list of features that you **may not** use in CaliberRM Web.

USER INTERFACE

The CaliberRM Web user interface is similar to that of the standard CaliberRM client. You can view all CaliberRM tabs and access most of the standard CaliberRM project information; however, the menu options are limited and exclude all items listed on page 367.

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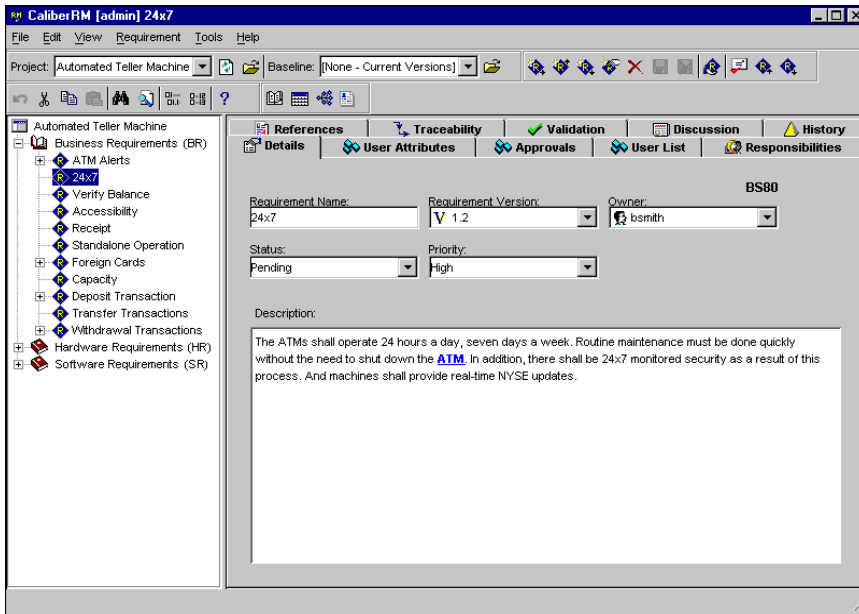
Menus

The CaliberRM Web menus have some of the same options as those in the standard CaliberRM client. All of the options are discussed in detail in the section "Menus" on page 188.

The **File** menu allows you to open a new project, open a baseline, refresh the project data, and exit the Web client.
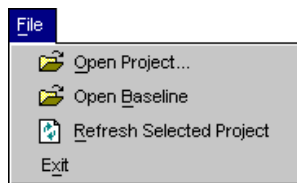
The **Edit** menu provides the same functionality as the standard CaliberRM client.
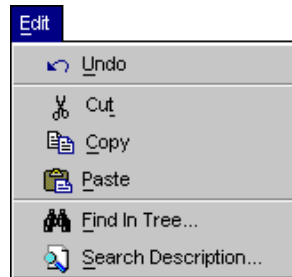
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The **View** menu allows you to view the hierarchical or serial numbers and specify which toolbars to display. A check mark beside a toolbar option indicates that it is selected.
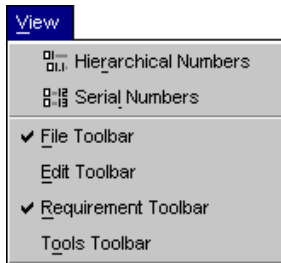
The **Requirement** menu provides the same functionality as the standard CaliberRM client. See page 193 for details about these options.

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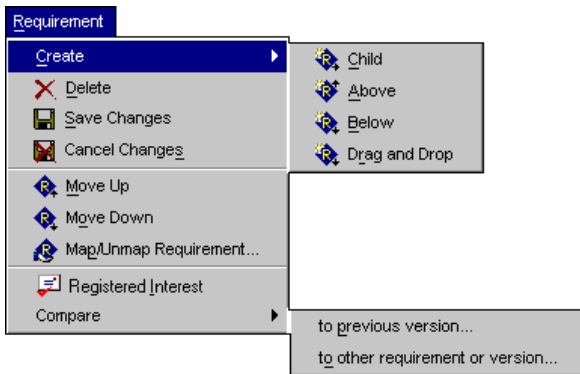
The **Tools** menu has some of the same functions as the standard CaliberRM client, but it does not contain options for certain features and integrations. See page 195 for details about these options.
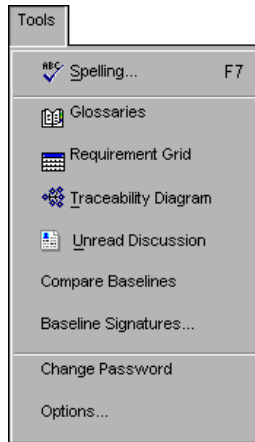
Under the **Tools** menu, CaliberRM Web **Options** provides an additional tab called **Add-In** that allows you to add additional dictionaries for the Spelling Checker feature..

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Adding and Removing Dictionaries

You may add or delete dictionaries for use with the Spell Checking feature.

To add or remove dictionaries:

1. Select **Tools > Options** from the CaliberRM Web menu.

2. Select the **Add-In** tab.

3. Click **Add**. The **Add Dictionary** dialog box is displayed.

4. Select a dictionary and click **Add**, or double-click the dictionary to add it.

5. Repeat Steps 3 and 4 for additional dictionaries you want to add.

   Note: Although you may add multiple dictionaries, you must specify only one dictionary when using the Spell Checker.

6. Select the dictionary you want the Spell Checker to use and click **OK**.

7. To remove a dictionary, repeat Steps 1-2. Select the dictionary you want to remove and click **Remove**. Click **OK** when finished.

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The **Help** menu provides the same functionality as the standard CaliberRM client. See page 199 for details on these options.
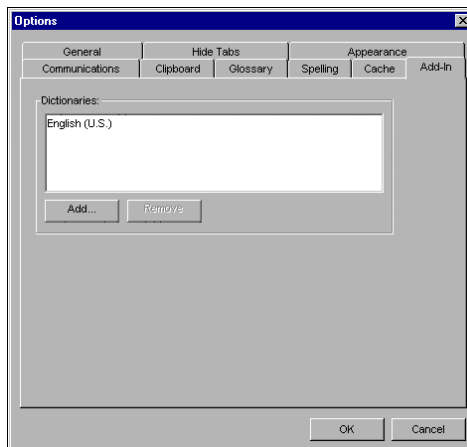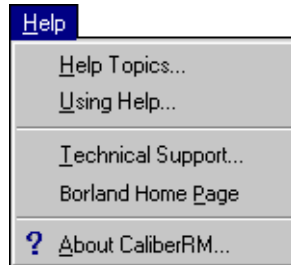

CALIBERRM WEBVIEW

CaliberRM WebView allows project teams to review and collaborate on requirements. Users can enter comments about the requirements using the Discussion feature. This feature helps revise and prioritize requirements.

CaliberRM WebView provides easy access to the group discussion feature for those who may provide valuable input to the project, but do not need fully functional clients.

USING CALIBERRM WEBVIEW

To access CaliberRM WebView:

1. Open a standard browser such as Netscape Navigator or Internet Explorer.

2. Enter the name or IP address of the server you want to connect to in the **Address** or **Location** field, depending on your browser. You may browse the URL of the Web server where CaliberRM WebView is installed instead if you prefer.

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Note: If your Caliber Administrator has changed the location of the CaliberRM WebView index page or has moved the links to a custom page, you will need to enter that location instead.

The CaliberRM Web index page is displayed.
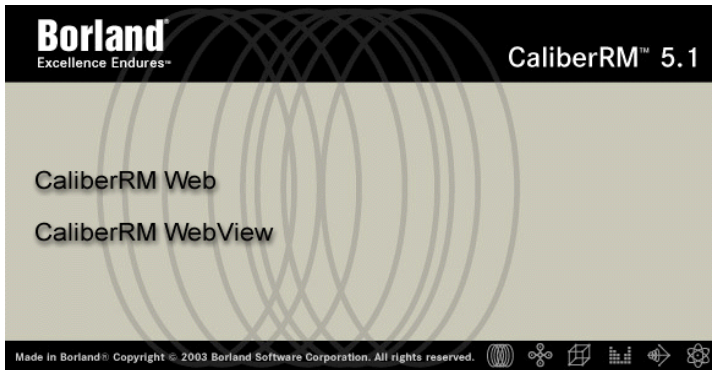
Download Java Runtime Environment

3. Click the **CaliberRM WebView** link.

4. Click the **CaliberRM Web** link.

    Note: You may be required to download the Java Plug-In.

The first time you attempt to use CaliberRM Web, the following window is displayed.

5. Click the **Always** button. The **Login** screen is displayed.
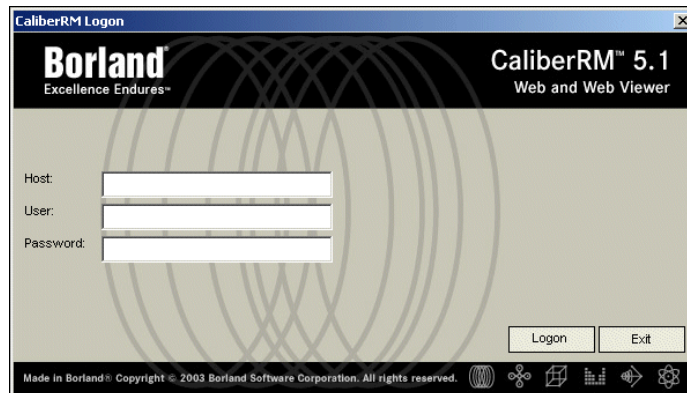
6. Enter your CaliberRM server **Host**, your **User** name and **Password** in the appropriate fields.

7. Click **Logon**. The system verifies your information, and logs you on to the server.

    You are now in CaliberRM WebView and can view requirements and enter discussion messages.

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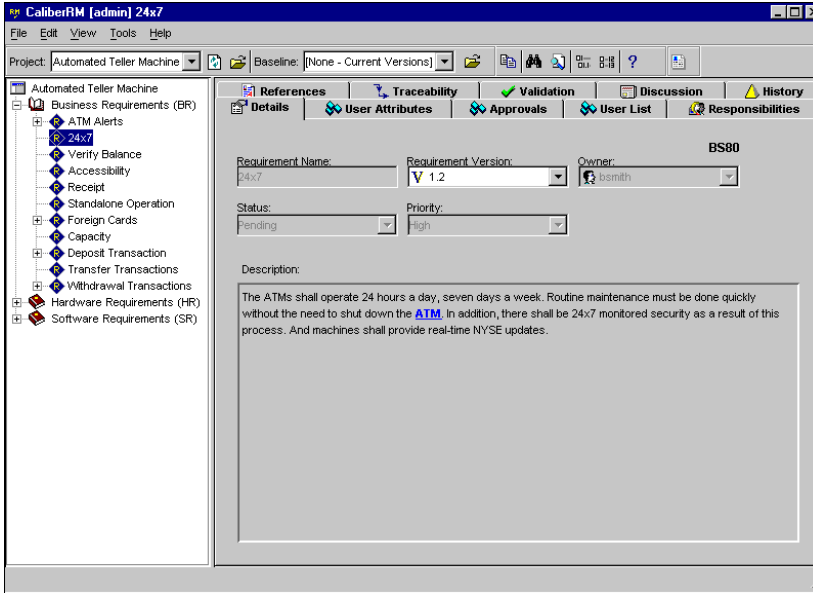
USER INTERFACE

The CaliberRM WebView user interface is similar to that of the standard CaliberRM client. You can view all CaliberRM tabs; however, the menu options are limited. With the correct permissions you can post messages in the group discussion. For instructions on entering group discussion messages, see "Group Discussion" on page 285.

CaliberRM WebView does not allow you to create or edit references, view the requirement grid or the traceability matrix.

Menus

CaliberRM WebView contains some of the same menus as the standard CaliberRM client. The menus have many of the same options as those in the standard

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CaliberRM client. All of the CaliberRM menu options are discussed in detail in the section "Menus" on page 188.

The **File** menu allows you to open a new project, open a baseline, refresh the project data, and exit the WebView.
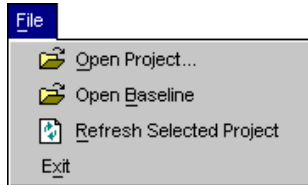
The **Edit** menu allows you to search for requirements by name or description.
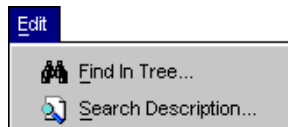
The **View** menu allows you to view the hierarchical or serial numbers and specify which toolbars to display. A check mark beside a toolbar option indicates that it is selected.
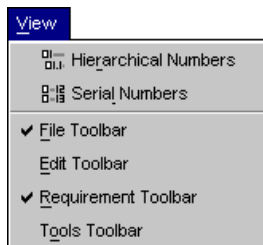
The **Tools** menu gives you the option to view unread discussions, view the **Baseline Signatures** window (administrators only) change your password and specify the look and feel of CaliberRM WebView through the **Options** dialog box.
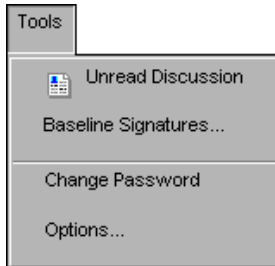
Under the **Tools** menu, CaliberRM WebView **Options** provides an additional tab called **Add-In**.
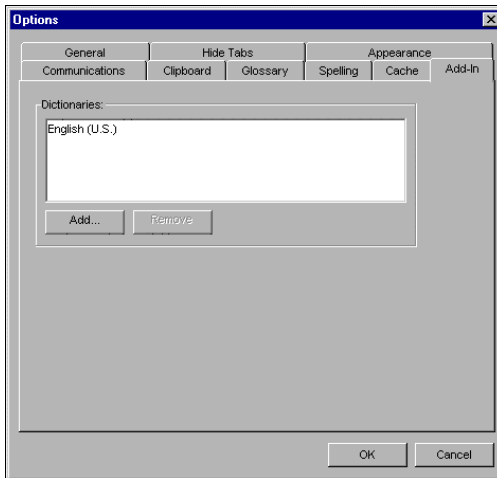
This tab allows you to add additional dictionaries for the Spelling Checker feature. See "Adding and Removing Dictionaries" on page 374 for information on adding dictionaries.

The **Help** menu provides the same functionality as the standard CaliberRM client. See page 199 for details on these options.
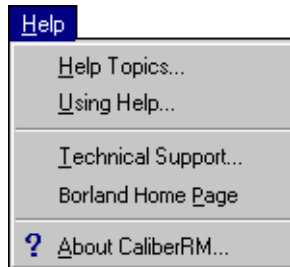
The options on the toolbar are: Refresh, Open Project, Open Baseline, Find in Tree, Search Description, Show Hierarchical Numbers, Show Serial Numbers, Unread Discussions and About CaliberRM.

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Chapter 24: Export To Microsoft Access

OVERVIEW

You can export CaliberRM project data to Microsoft Access by selecting which tables you want to export from a list of available tables. The data is exported into Access table format(s).

Note: See "Appendix B: Export to Access Tables" on page 429 for the complete list of available tables to export.

There are two methods for exporting project data:

• by selecting **File > Export to Access** from the menu,

    OR

• by running **Export to Access** from the **command line**.

Using Export to Access from the Menu

To export data:

1. Select **File > Export to Access** from the menu.

The **Database Export Setup** dialog box is displayed.
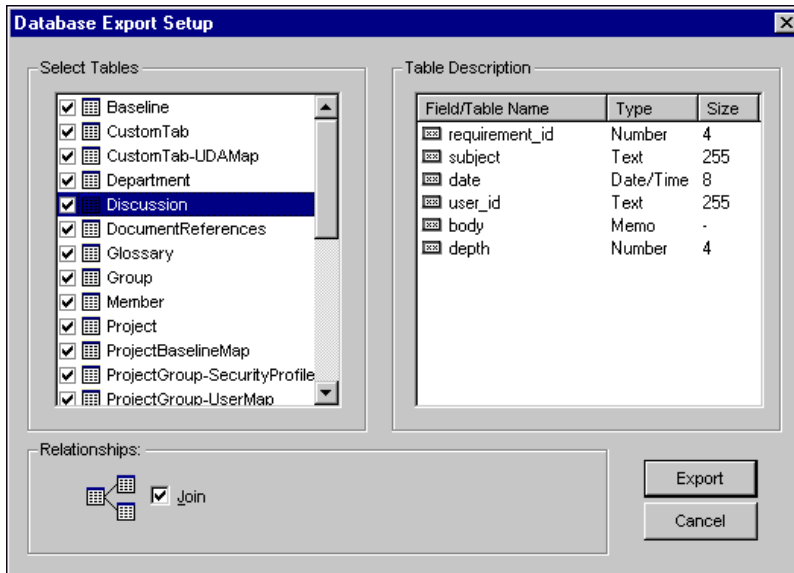
2. Select the check box to the left of the table to include the table for export, or clear the check box to exclude the table from export. The default setting is to export all tables. To view the fields in a particular table, select the table.

3. If you want to show the relationship between the tables, select the **Join** check box.

4. Click **Export**.

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The **Save As** dialog box is displayed.
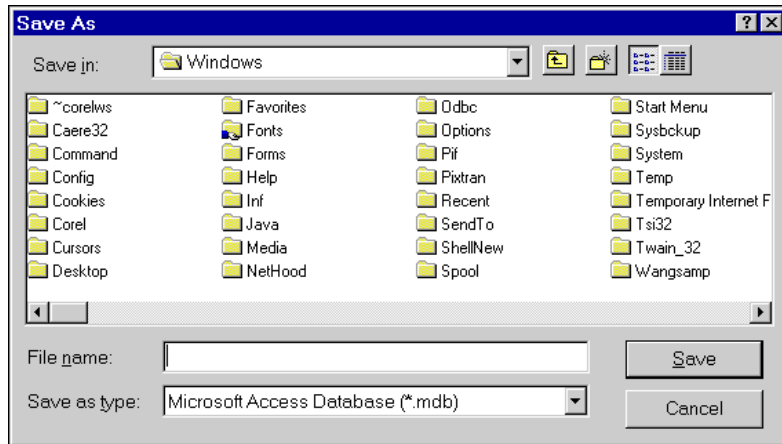
5. Navigate to the destination directory of the file and enter a file name and type.

6. Click **Save**.

CaliberRM exports the data into the file and format you have specified.

Command Line Export

You can initiate an Export To Access process by running CaliberRM from the command line. When executed from the command line, **all tables** are exported. This command can be used in a batch file to run exports in off-peak hours.

To execute an Export To Access process from the command line:

1. Select **Start** > **Programs** > **Command Prompt** to get a DOS command prompt.

2. At the C:\> prompt enter: **cd Program Files\Borland\CaliberRM**, to change the directory to where the CaliberRM.exe file resides.

Note: Change directory to that of your CaliberRM executable file if different from above.

3. At the prompt, enter the following command:

    CalibrRm -export *<none>* **-project** *<projectname>* **-filepath** *<filepath>* **-host** *<hostname>* **-user** *<userid>* **-security** *<password>*

Where:

- **-export:** Used to signify that a command line export to Microsoft Access is being executed. No value is needed, however, this switch must be present to start the export.

- **-project:** Indicates the project from which data is exported. If this switch is not present, the last project used is the default.

- **-filepath:** Used to select the file path to place the database generated from the export. If this switch is not present, the data is placed in the Windows temporary directory with a file name of *CaliberRM.mdb*.

- **-host:** Used to enter the host or server name for logon purposes. If this switch is not present, the last server logged on to is used by default.

- **-user:** Used to enter the user name for logon purposes. If this switch is not present, the last user name logged on is used by default.

- **-security:** Used to enter the password for logon purposes. If this switch is not present, the password from the Caliber Toolbar is used.

The switches are case sensitive and are processed from left to right. Only the first letter of the switch must be present for it to be processed. A switch can be preceded by a '-' or a '/'.

While the export is taking place, CaliberRM remains minimized and a status window is displayed:

When the export is complete, you are prompted to open the database.

Chapter 25: Importing Requirements from Microsoft Word

OVERVIEW

You can import requirement names and descriptions from a Microsoft Word document into a CaliberRM project using the **Import From Word Wizard**.

The **Import** process requires the following information:

- The Microsoft Word file name (e.g., Requirements.doc).

- The requirement naming convention. You can either import requirement names or have **Import** automatically assign the requirement names. **Import** uses the document name as the base name followed by an incremental number for each requirement.

- You can import requirement names if the requirement names in your document are in the same, specific format. Requirement names can be formatted in three different ways:

  - **Paragraph style:** You may use default paragraph styles (e.g, Heading 1, etc.) or custom paragraph styles (e.g., Requirements, etc.).

  - **Delimited text:** Import uses the set of delimiters (e.g., commas, tabs, etc.) you specify.

  - **Keywords:** Import can recognize multiple keywords.

- The requirement description format. If you are importing requirement names by paragraph style, you can import requirement descriptions by extracting the text between paragraph styles used for requirement names, or indicating a paragraph style for requirement descriptions.

Note: If you are importing names using delimiters or keywords, requirement descriptions can only be imported by paragraph style.

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Supplied with this information, Import analyzes the Microsoft Word document and extracts the requirement information. When completed, Import previews the new requirements before placing them in the project tree.

Once you have reviewed the new requirements and made any necessary changes, you can select the location for the new requirements and save them.

To import a Microsoft Word document into CaliberRM:

1. Select **File > Import From Word** from the CaliberRM menu. The **Import from Word** wizard is displayed.
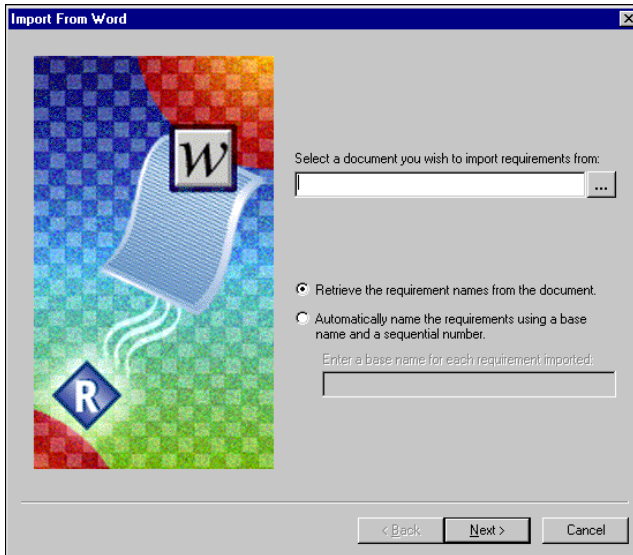
2. Enter the path and name of the Microsoft Word file or click the **Browse** button to navigate to the file.

    Indicate how you want to name the requirements. Select either the **Retrieve the requirements names from the document** option button, or the **Automatically name the requirements using a base name and a sequential number** option button. Enter a base name here. If you do not enter a name, **Import** uses the Microsoft Word document name as the base name by default.

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3. Click **Next**.
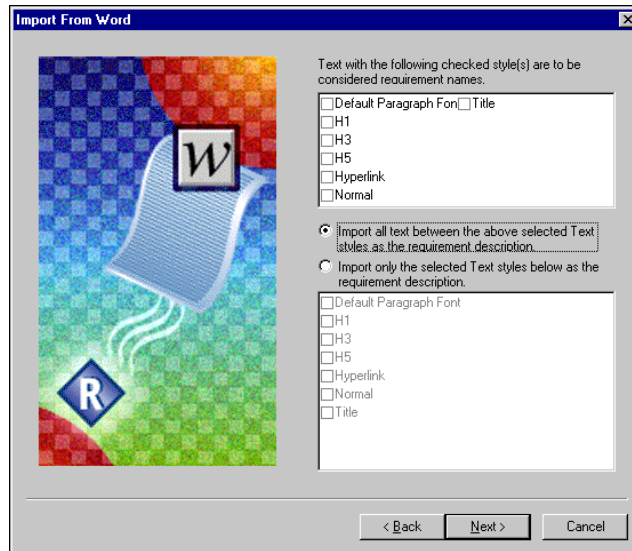
4. If you are importing requirement names by style, in the top pane, select the paragraph style(s) that are specific to requirement names. Styles define the appearance of various text elements within the document, such as headings and body text. The styles listed are those found in your Microsoft Word document. You may select any or all styles from the list.

5. In the bottom pane, indicate how to recognize requirement descriptions:

    • The **Import all text between the above selected Text styles as the requirement description** option can only be used if you are importing requirements names by style**.**

    • If you are not importing requirement names by style, select the **Import only the Text styles below as the requirement description** option. Select the styles that are specific to requirement descriptions.

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6.   Click **Next**.
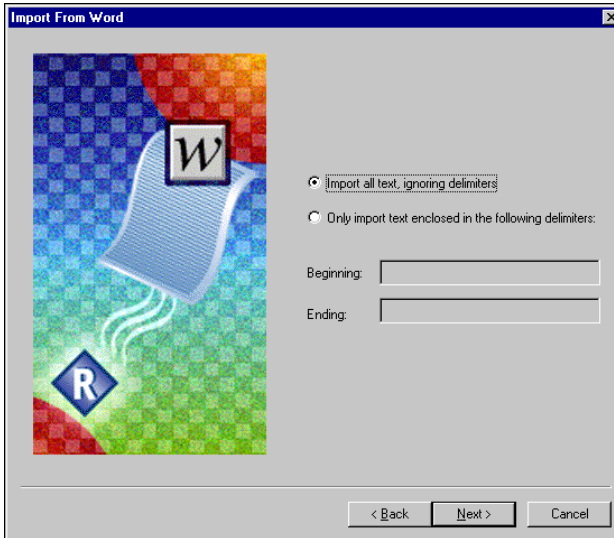
7.   If you are importing requirement names by paragraph style, select the **Import all text, ignoring delimiters** option button.

   OR

   Select the **Only import text enclosed in the following delimiters** option button. The **Beginning** and **Ending** fields become available. Enter the beginning and ending delimiter in the appropriate area.

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8. Click **Next**.
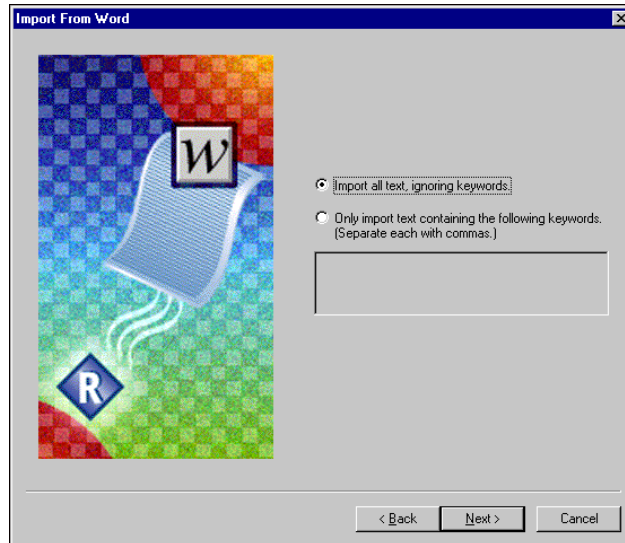
9. If you are importing requirement names by paragraph style, select the **Import all text, ignoring keywords** option button. Go to Step 13.

10. If you are importing requirement names by keywords, choose the **Only import text containing the following keywords** option button. Enter the keywords in the available field, separating each keyword by a comma. Phrases containing these keywords will be imported as requirement names.

11. Click **Next**.

    Import from Microsoft Word begins processing the document based on your choices from the above steps. Once processing is completed, **Import** from Microsoft Word displays a list of new requirements for each criteria that was met, as shown on the following page.

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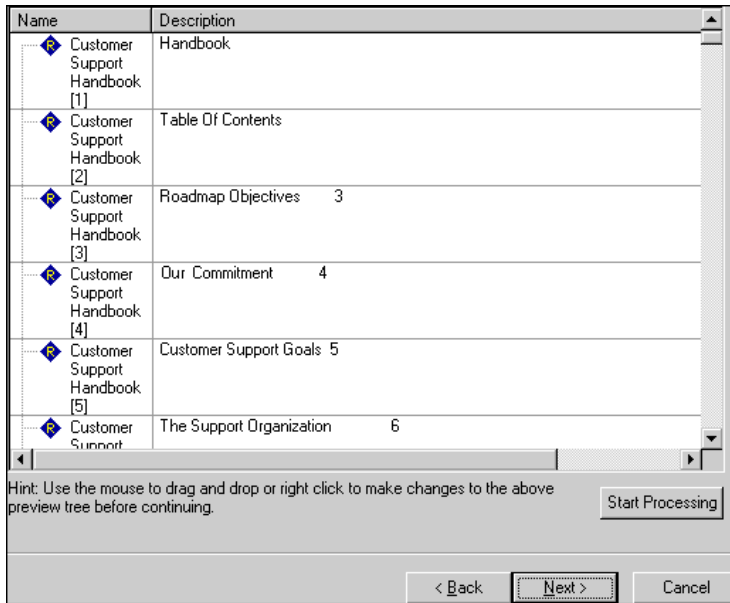
Note: Import from Microsoft Word also creates child requirements based on the paragraph style hierarchy in your document.

You can right-click in the preview tree to make any or all of the following changes:

• Delete a requirement.

• Rename a requirement.

• Show or hide vertical and/or vertical lines.

• You can edit the name and description fields by selecting the field, then clicking once to place the cursor in the appropriate field.

• You also have drag-and-drop functionality in the preview that allows you to move the new requirements and place them in any desired order.

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12. Click **Next** once you have reviewed the new requirements and have made any necessary changes. The CaliberRM requirement list is displayed.
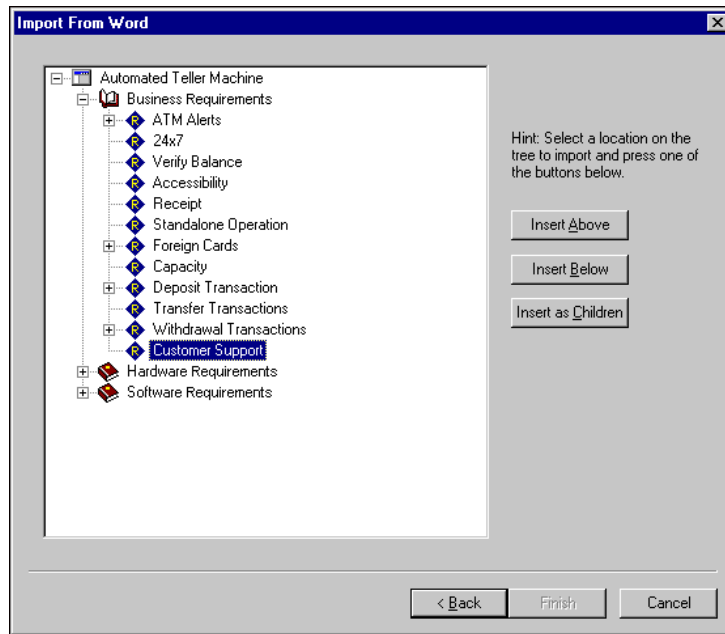
13. Choose the location for the newly created requirements by selecting a requirement. Select one of the following options: **Insert Above**, **Insert Below**, or **Insert as Children**.

14. Click **Finish** to complete import. The **Import is Complete** dialog box is displayed.

15. Click **OK**.

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Chapter 26: RM Export and RM Import

You can export and import project data by using the RM Export and the RM Import utilities. These utilities enable customers to move data from one CaliberRM server to another.

RM EXPORT

You may export a project or requirement information from a Caliber server into an ASCII file. That file may be imported into the same or another Caliber server and other applications.

*Note: You **must** be in the Administrator group to export Caliber information.*

The export utility provides a way of selecting requirements, requirement types, users, groups, user-defined attributes and project information, referred to as objects, for export. After an export, a log file is created that contains information about what was exported and any error messages.

The export utility creates a separate ASCII file for each type of object exported. You specify the name and path for the exported data. The export utility creates a directory or "data set," using the name and path specified. It then creates individual files for each type of object exported. The exported data contains object names only and does not contain coded data. The data files adhere to a particular format that is covered in detail in "Appendix C: RM Export Object Format" on page 437.

It is possible to create a data file in the correct format for import using programs other than CaliberRM's export utility. If the import utility is used to import data created by programs other than CaliberRM's export utility, it is the user's responsibility to ensure that the data is accurate and properly formatted.

⚠ **WARNING: IT IS POSSIBLE TO IMPORT CORRUPTED OR INCORRECT DATA WITH THE IMPORT UTILITY. BORLAND STRONGLY RECOMMENDS THAT YOU BACKUP YOUR DATABASE BEFORE USING THE IMPORT UTILITY. BORLAND IS NOT**

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RESPONSIBLE FOR THE RESULTS OF IMPORTING DATA CREATED BY PROGRAMS OTHER THAN THE CALIBERRM EXPORT UTILITY.
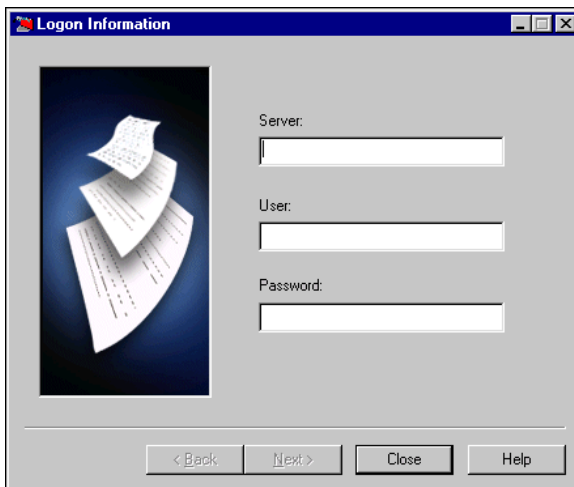
Export Data for Import to a Caliber Server

To export data from a server for later import to the same or another Caliber server:

1. Select **Start > Programs > CaliberRM > RM Export** from your Windows workstation.

    *Note: This feature is only available if you chose a **Custom** installation when you installed CaliberRM, and installed this feature.*

    The **Export Logon Information** screen is displayed.

    Note: This window does not display if you are already logged on to CaliberRM. If you are already logged on, you may proceed to Step 6.

2. Enter your **Server** name or IP address, **User** name and **Password**.

3. Click **Next**. The **Profile** screen is displayed.
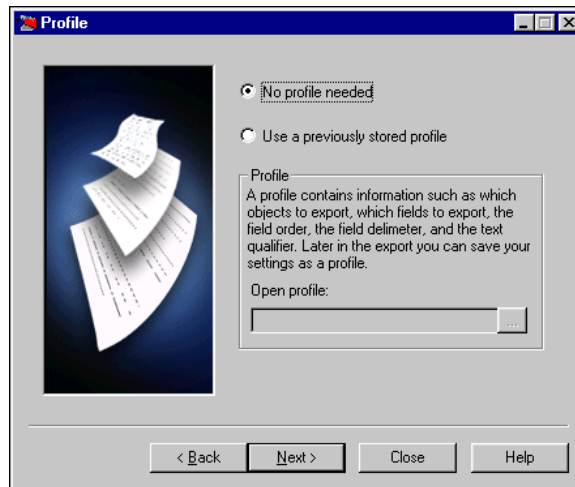
4. Select the **No profile needed** option button, or the **Use a previously stored profile** option button if you have previously created a profile that you want to use.

5. Click **Next**.

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The **Import Option** screen is displayed.
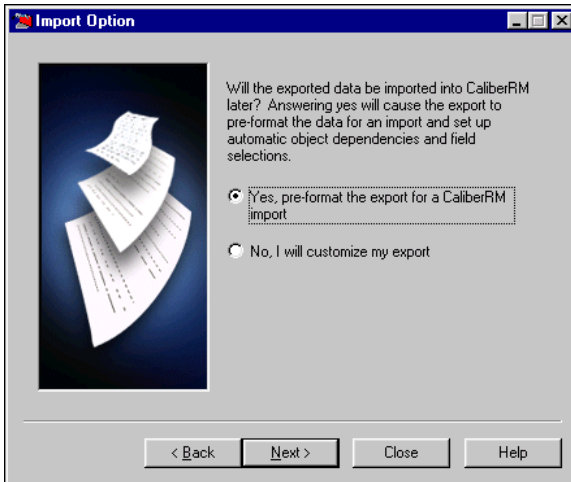
6. Select the **Yes, pre-format the export for a CaliberRM import** option button.

    Note: The option to customize the export is made available to advanced users who want to import requirement data into a different application. For more information on building a customized export, see "Export Data for Import to Another Application" on page 401.

7. Click **Next**.

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The **Select Object** screen is displayed.
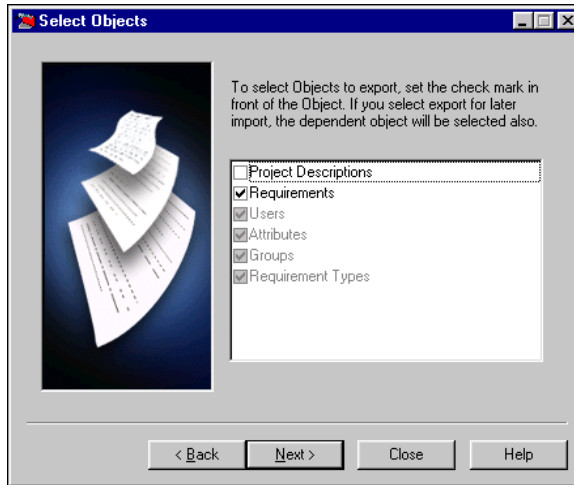
Note: By choosing the pre-format option in Step 6, selecting certain objects at this step causes others to be automatically selected, as shown in the table below.

EXPORT SELECTION DEPENDENCIES						
AUTOMATIC SELECTIONS						
	Users	Groups	Types	UDAs	Reqts	Projects
Users		X				
Groups	X					
Types				X		
UDAs						
Reqts	X	X	X	X		
Projects	X	X	X	X		

By default, the requirements object is pre-selected and is all that is required for importing into another project.

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⚠ **WARNING! EXPORTING A PROJECT DOES NOT EXPORT BASELINES, DEPARTMENTS AND REQUIREMENT HISTORY.**

> *Note: If you click the Project Descriptions object, only Project Descriptions will be exported. RM Export will export descriptions for **all** existing projects in the current database. These projects will be created during the import if they do not previously exist. Borland recommends that you export the requirements object only and manually create the project in which to import. RM Import offers an option to create a new project during the import process.*

8. Click **Next**. The **Data Set** screen is displayed.

9. Create a name for your data set. Click the **Browse** button to navigate to a desired location in which to save your data set. A folder with this name is created and appended to your data set path. If you would like to save this profile for use later, click the **Save Profile** button and select a location in which to save it.

> *Note: The **Advanced** button changes your delimiters and qualifiers that separate your data within the export/import files. This is not recommended for an export that will be imported into CaliberRM. See "Export Data for Import to Another Application" on page 401 for more information on this aspect of the feature.*

10. Click **Finish**. The **Export** screen is displayed. You are prompted to select a project from which you would like to export data.

11. Select a project from the **Select Project** screen drop-down list and click **OK**.

    The export completes.

12. Click **Close**.

You may now use the Data Set to import information to another server or to another project.

Export Data for Import to Another Application

To export data for import to another application, complete the following steps:

1. Complete Steps 1-5, starting on page 396. The **Import Option** screen is displayed.

   Select the **No, I will customize my report** option button.

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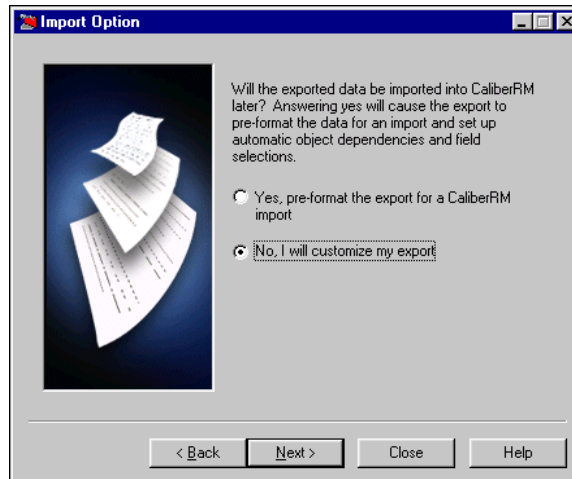
2. Click **Next**. The **Select Objects** screen is displayed.
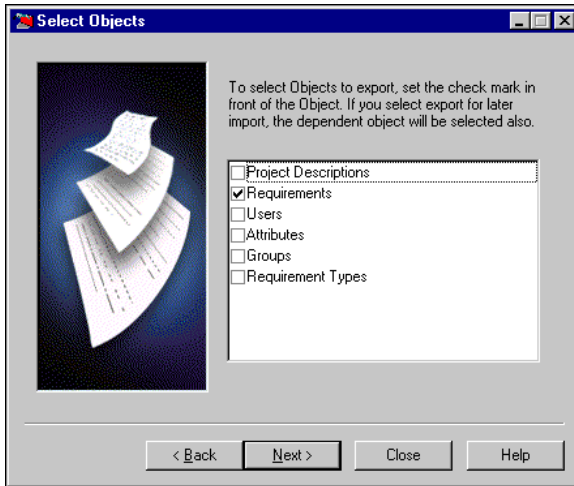
3. Select the object(s) you want to export.

4. Click **Next**. The **Object Selection Option** screen is displayed, as shown on the following page.

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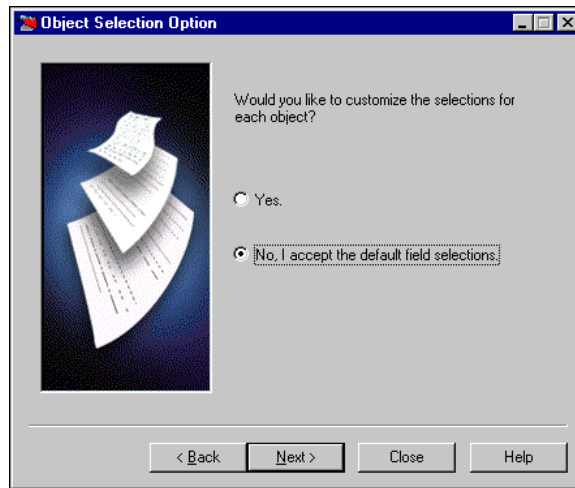
5. Select the **Yes** option button if you would like to customize your export in more detail. Click **Next**, and go to Step 6 under the section "Object Field Selection" on page 406.

   OR

   Choose the **No, I accept the default field selections** option button, click **Next**, and continue with Step 6 on the next page.

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The **Data Set** screen is displayed.

6. Create a name for your data set and the data set path. Click the **Browse** button to navigate to a desired location. A folder with this name is created and appended to your data set path.

7. If you want to change your delimiters and qualifiers, click the **Advanced** button. The **Advanced Settings** screen is displayed.
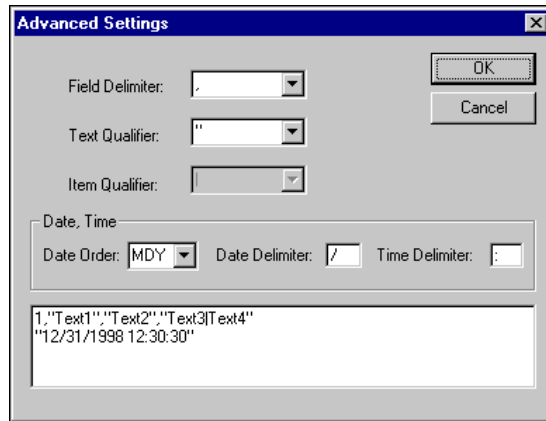
8. Select the delimiters, qualifiers and date/time formats you would like in your export. The options you select are displayed in the window so that you may see how the information is separated.

9. Click **OK**.

10. If you would like to save this profile for later use, click the **Save Profile** button in the **Data Set** screen, and select a location in which to save the profile.

11. Click **Finish**. The **Export** screen is displayed.

12. Select the project that contains the objects you want to export from the **Select Project** screen drop-down list and click **OK**.

    The export completes.

13. Click **Close**.

You may now use the Data Set to import information to another application.

Object Field Selection

If you chose to customize your object fields in Step 5 on page 403, complete the following steps:

6. Click **Next** in the **Object Selection Option** dialog box.

    The **Select Fields** screen is displayed.
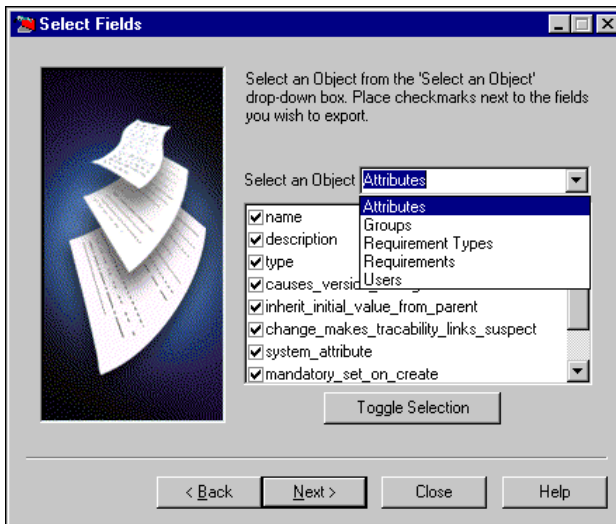
7. Select an object from the drop-down list, then select the fields you would like to export or clear any you do not want to export. Complete this step for each object type that you are exporting. See "Appendix C: RM Export Object Formats" on page 437 for information about the object fields you may select.

8. Click **Next**.

9. Complete the export by following Steps 6-13 starting on page 404.

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Export Directory Structure

An example file directory structure of a data set after an export is shown below.
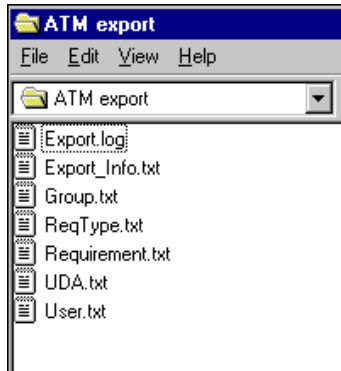
Export.log File

This file is a record of what was exported and where it was saved. It is referred to as the Export Log. The first record of the export file is a header that describes the format of the records to follow.

Export_Info.txt File

Each object field exported from CaliberRM is delimited by quotations (" ") and the text is separated by commas (,) called qualifiers. This file is a record of the type of delimiters and qualifiers used during your export.

Group, ReqType, Requirement, UDA, User .txt files

These files represent the data that was exported for each object. All files do not have to be present.

RM IMPORT

You may import a project or other objects to a Caliber server by specifying the path and name of the import data. This is normally a directory created by RM Export.

The import data contains object names, not coded data. But the files used for import must adhere to a certain format. These formats are detailed in "Appendix C: RM Export Object Formats" on page 437.

When you import certain objects, objects of other types may be created by the import utility as needed. The utility attempts to recreate the object as it existed in the original data; however, if the data is not available, an appropriate object with the correct name is created automatically. For example, if an imported requirement is owned by "smith," the import utility searches the import data for a definition for "smith." If "smith" does not exist, a userid "smith" is created automatically with minimal data.

IMPORT USING DATA FROM A TYPICAL CALIBERRM EXPORT

WARNING! BASELINES, DEPARTMENTS AND REQUIREMENT HISTORY ARE NOT AVAILABLE FOR AN RM IMPORT.

To import requirements into a project in CaliberRM using data from a previous CaliberRM export:

1. Select **Start > Programs > CaliberRM > RM Import** from your Windows workstation. The **CaliberRM Logon** dialog box is displayed.

    Note: The logon window does not display if you are already logged on to CaliberRM. Proceed to Step 4.

2. Enter your server **Host** name, **User** name and **Password**.

3. Click **Logon**.

The **Caliber Import Utility** screen is displayed.
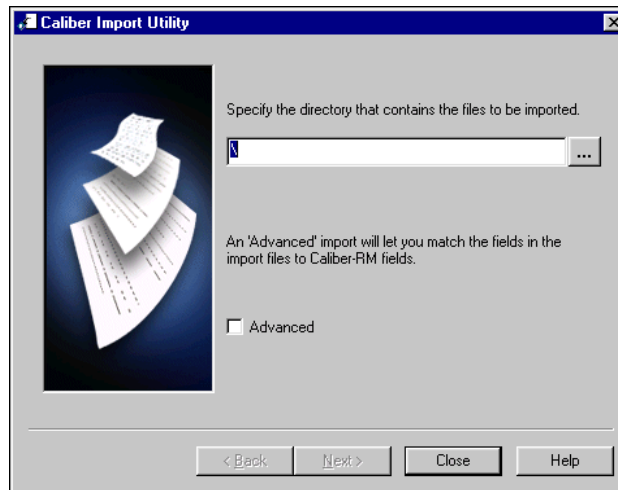
4. Type in the path of the directory that contains the files to be imported, or click the **Browse** button to select the directory containing the data set.

    *Note: Selecting the **Advanced** check box allows you to match data in your import files to fields in CaliberRM. For example, if user **bjones** exists in Project A, but you want user **tjohnson** to replace bjones in Project B that you are importing to, this feature allows you to replace bjones with tjohnson during import. For information on performing an Advanced import, see "Performing an Advanced Import" on page 411.*

5. Click **Next**.

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The **Caliber Import Utility-Select Project** screen is displayed.
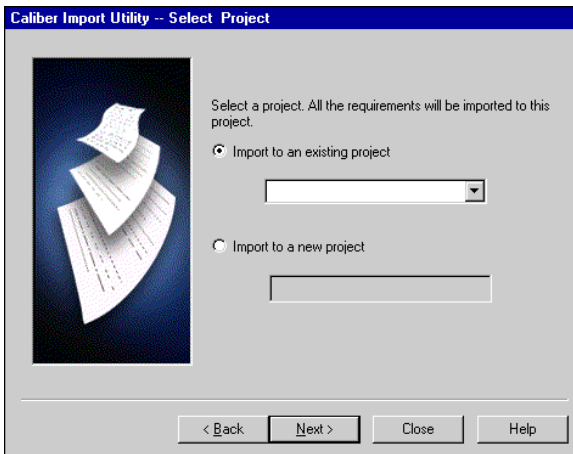
6. Select the **Import to existing project** option button and select a project from the drop-down list, or choose the **Import to a new project** option button and create a new project name.

7. Click **Next**. The **Caliber Import Utility-Importing** screen is displayed and importing begins. The utility searches and matches all of the project data.

8. Click the **Import** button to import the information. The utility imports the data as a log file to the data set you selected in Step 4.

9. Click **Close**.

Note: Importing may be a lengthy process if there is a large amount of data to import. Importing should be done during low-use hours to avoid impacting other users.

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Performing an Advanced Import

To perform an Advanced import:

1. Select **Start > Programs > CaliberRM > RM Import** from your Windows
    workstation. The **CaliberRM Logon** dialog box is displayed.

2. Enter your server **Host** name, **User** name and **Password**.

    *Note: The logon window does not display if you are already logged on to
    CaliberRM. Proceed to Step 4.*

3. Click **Logon**. The **Caliber Import Utility** screen is displayed.
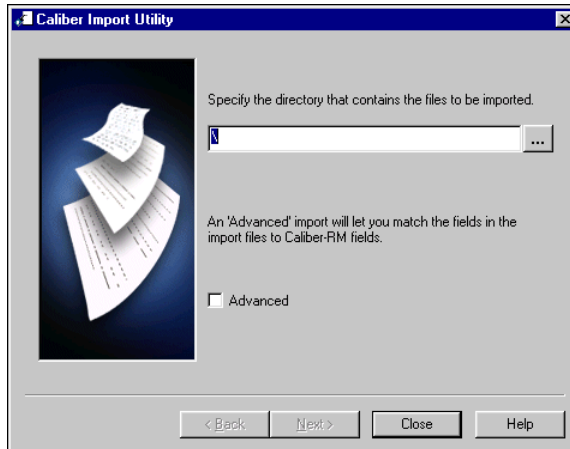
4. Navigate to the directory that contains the files to be imported by clicking the
    Browse button.

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5. Select the **Advanced** check box and click **Next**. The **Select Import File** screen is displayed.
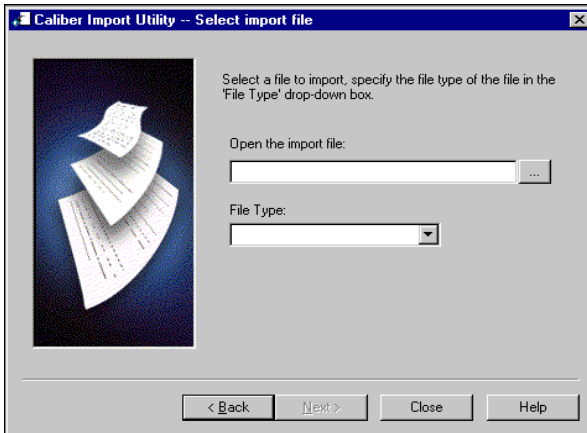
| ■ | 6. | Navigate to the Import file you would like to import by clicking the **Browse** button. This is usually a text file contained in a data set created by using RM Export. |

7. Select the type of file you are importing from the drop-down list box.

8. Click **Next**.

9. If you selected a **Requirement import file** in Step 7, you are prompted to choose a project or create a new project in which you want to import the requirements. Make a selection and click **Next**.
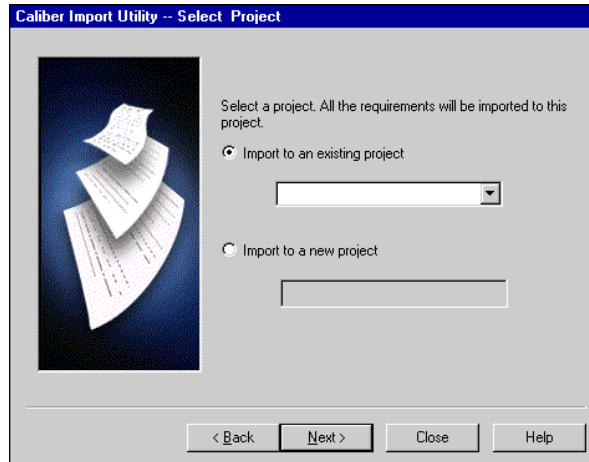
The **Delimiter** screen is displayed, and the information is parsed.

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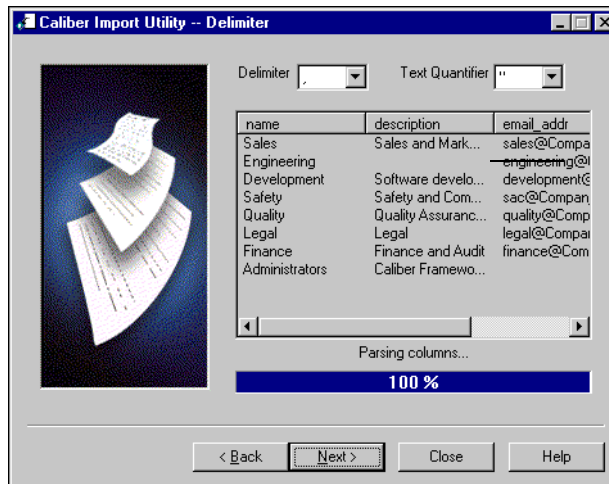
If the text in the information parsing box is not set up as columns as shown above, the delimiter and text qualifier do not match those that are specified for the import. Set your delimiters and text qualifiers in the file using the drop-down list boxes until columns are displayed. If you choose delimiters or qualifiers that are not valid, you get an error message.

10. Click **Next**.

If you chose to import a **User import file** in Step 7, go to Step 11.

If you chose to import a **Group import file** in Step 7, go to Step 14.

If you chose to import a **Requirement**, **Requirement Type** or **UDA** import file in Step 7, go to Step .

11. The **Caliber Import Utility - User** screen is displayed.
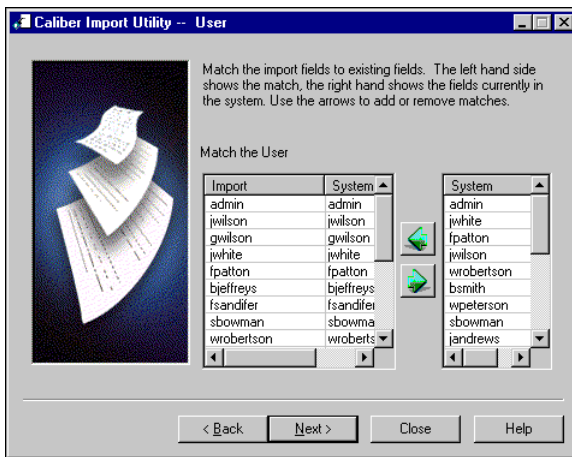
This step allows you to match or replace any users that are members of each group. For example, if user **jwilson** exists in Project A, but you want user **bjeffereys** to replace jwilson in Project B that you are importing to, this feature allows you to replace jwilson with bjeffereys during import.

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12. To match or replace a user, select the user you want to match from the left
    panel, then select the replacement user from the right panel and click the **Move
    Left** button. Complete this step for all users you want to match or replace.

13. Click **Next**, and proceed to Step .

14. The **Caliber Import Utility - Group** screen is displayed.
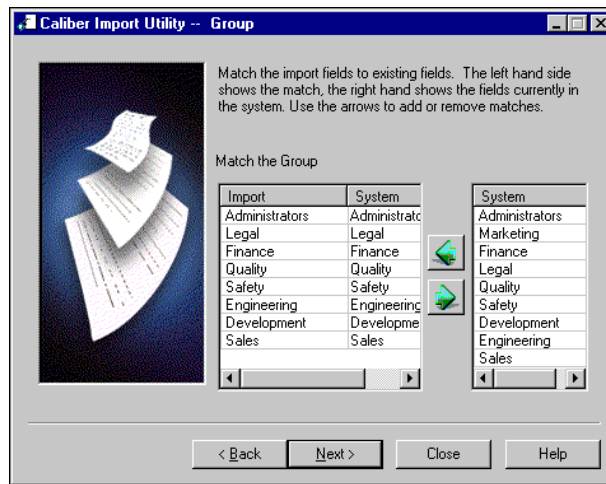
This step allows you to match or replace any groups that are assigned to your
projects. For example, if the **Administrators** group exists in Project A, but
you want the **Engineering** group to replace **Administrators** in Project B that
you are importing to, this feature allows you to replace **Administrators** with
Engineering during import.

15. If you want to match or replace a group, select the group you want to match
    from the left panel, then select the replacement group from the right panel and
    click the **Move Left** button. Complete this step for all groups you want to
    match or replace.

16. Click **Next**.

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The **Importing** screen is displayed.
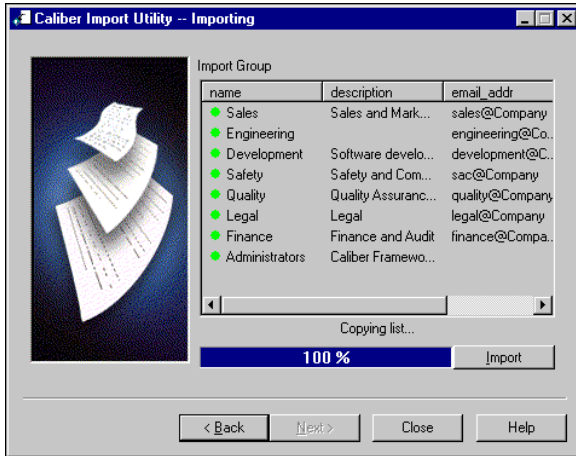
The utility searches and matches all of the project data.

17. Click the **Import** button to import the information. The utility imports the data as a log file to the data set you selected in Step 4.

18. Click **Close**.

Note: Importing may be a lengthy process if there are is a large amount of data to import. Importing should be done during low-use hours to avoid impacting other users.

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Import Directory Structure

The original data set that is used during the import process now contains a log file called Import.log that contains information about what objects were imported and from where.

An example file directory structure after a CaliberRM data set import is shown below:

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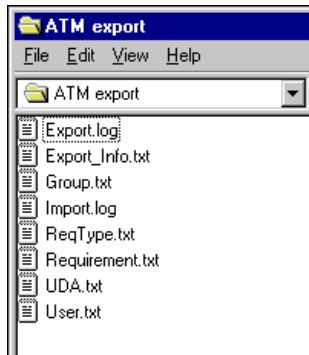
Chapter 27: Project Integrations

This chapter details the steps required to include a vendor add-in to CaliberRM.

Please visit www.myrequirements.com/caliberrmsdk for sample programs and technical documentation on the CaliberRM SDK.

For information on setting up the TestDirector, Select Enterprise, SCC, or Estimate Professional integrations, please visit the CaliberRM Customer Zone at www.starbase.com/support/logintosupportonline.asp, or contact support.

CALIBERRM VENDOR ADD-IN MODULE

The CaliberRM Vendor Add-In Module allows you to create LiveLink integrations between external applications and CaliberRM.

The add-in module is a registered COM server that acts as a communication bridge between the CaliberRM client and an external application. It provides the ability to create traces to external objects and view external object information from the CaliberRM client.

ADDING A VENDOR ADD-IN MODULE TO CALIBERRM

To add a vendor add-in module:

1. Open Framework Administrator and select a project.

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2. Select the **External Traceability** tab.
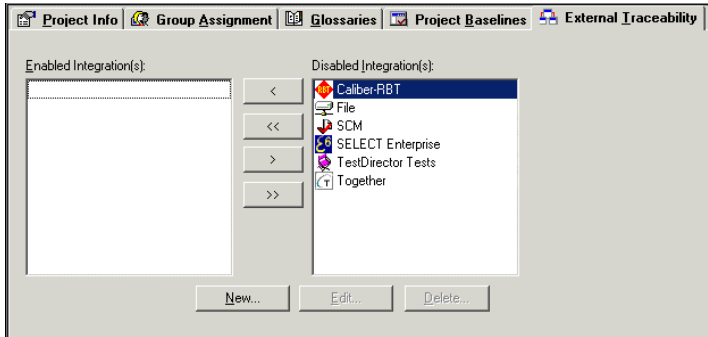
Click the **New** button. The **New Integration** dialog box is displayed.
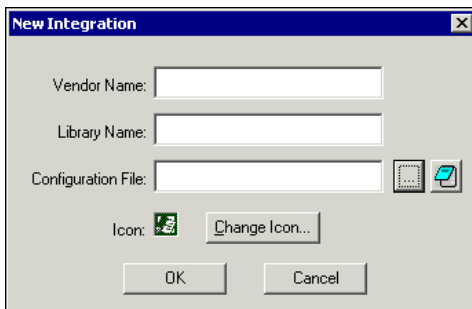
3. Type in a unique **Vendor Name** (this name appears on the **Traceability Modification** tab), **Library Name** (the first word in the COM component's ProgID), **Configuration File** location and choose an icon.

*Note: To browse for the file, click the **Browse** button. To view the file, click the **Notepad** button.*

4. Click **OK** to create the new integration.

The new integration is added to the **Disabled Integration(s)** list for all the projects in the CaliberRM database.

5. To enable the integration, select the integration in the **Disabled Integration(s)** list and click the **Move Left** button.

    *Note: You may add all integrations at once by clicking the **Move All Left** button.*

    The images below are examples of a MS Project add-in module.
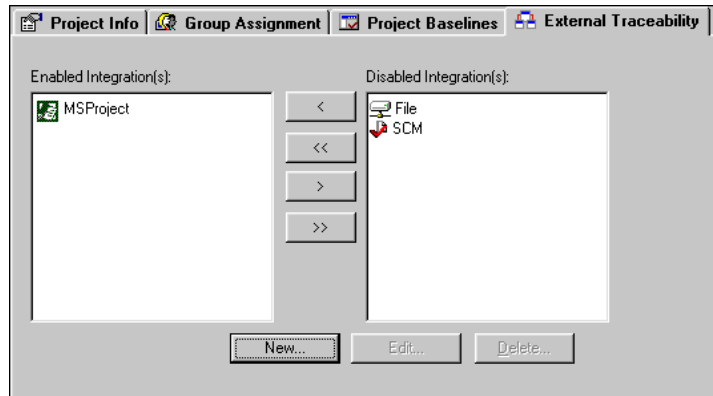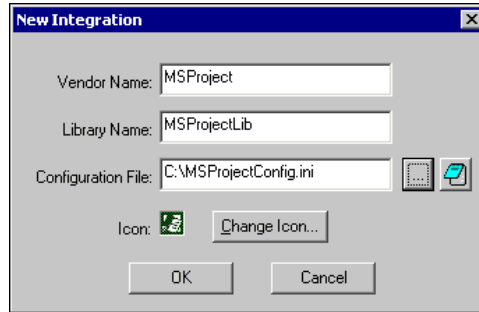
The **Add-In** menu option appears in the Traceability Modification window.
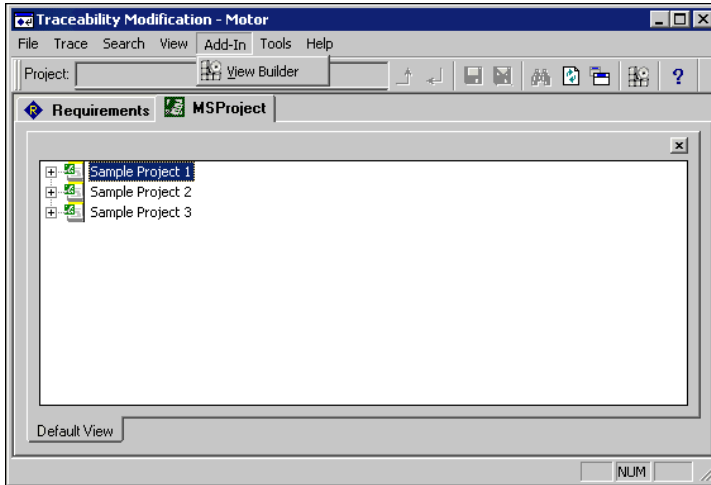
Click the **View Builder** button to invoke the add-in server's view builder.

ENABLING OTHER INTEGRATIONS

Note: Before you can enable and add TestDirector, Select Enterprise, Estimate Professional or SCM tools, you must configure your system. For detailed instructions about configuring and using these integrations, please visit www.starbase.com/support/logintosupportonline.asp, or contact support.

1. Open Framework Administrator and select a project.

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2. Select the **External Traceability** tab.
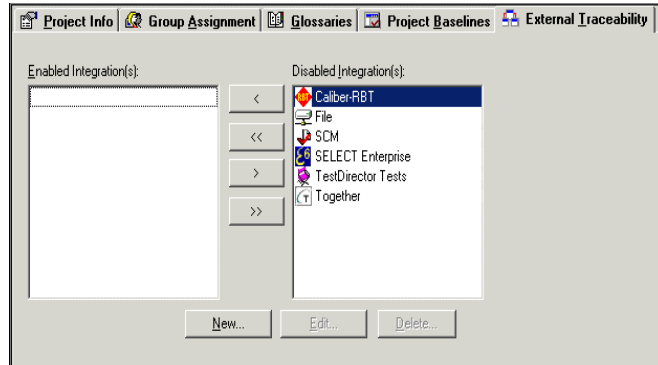
3. Select the integration you want to enable from the **Disabled Integrations** list and click the **Move Left** button.

    *Note: You may add all integrations at once by clicking the **Move All Left** button.*

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Appendix A: CaliberRM Messages

Error Message	Meaning
Can't Establish Connection. Sorry, your client is incompatible with the current servers.	The client you are connecting with is out of date with the server. Most likely the server has been upgraded and your client now needs upgrading.
Invalid user ID or password.	Can't log in because the user ID or password is invalid.
User not authorized.	The operation failed because the connected user does not have the security privileges required for the operation.
No available license.	The operation failed because there are no more licenses available.
The term could not be added, because it already exists in the glossary.	You tried to add a term to the glossary that already exists.
The term does not exist in the glossary.	You tried to look up a term in the glossary that doesn't exist any more. Someone must have deleted it.
The baseline already exists.You are trying to create a baseline that already exist.	You are trying to create a baseline that already exists.
The object requested is currently locked by [name]	The specified user has the requirement or other object locked. You cannot modify the object until it is released.
You have entered either a duplicate or old password.	You've tried to change your password to one that is the same as your old password or one of you old passwords.
The password you entered is too short.	You've tried to change your password to a password that is not long enough. Use a longer password.

Error Message	Meaning
The minimum password age has not been met. You will not be able to change your password now.	You cannot change your password because it is too young.
You do not have permission to change your password. Please contact your CaliberRM administrator.	You cannot change your own password due to security settings.
Your CaliberRM account has been disabled. Please contact your CaliberRM Administrator for more information.	You cannot log on because your account has been disabled.
Your CaliberRM login password has expired. You will have to choose a new password.	You cannot log on because your password has expired.
Your CaliberRM login password has to be changed in order to login. Please contact your CaliberRM Administrator for more information.	You must change your password before continuing.
The requirement being linked to is linked to another requirement. Please choose a different requirement to link to.	You cannot map to a requirement that is mapped to another requirement.
The requirement you are trying to delete has other requirements linked to it. You can't delete a shared requirement.	You cannot delete a shared requirement.

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Error Message	Meaning
The requirement you are modifying is currently shared with another requirement and cannot be shared again.	A requirement can not be mapped to more than one requirement.
A child or descendant requirement is reserved.	The operation failed because a child or other descendant requirement is currently locked.
Requirement type cannot be deleted because it contains requirements in one or more projects.	You cannot delete a requirement type that has requirements.
The object is in use.	The operation failed because the current requirement or other object is in use.
The baseline is locked.	The operation failed because the baseline is locked.
The object is locked.	The operation failed because the requirement or other object is locked.
The object has been moved or deleted.	The requirement or other object requested no longer exists.

Warning Message	Meaning
Your CaliberRM license will expire in n days.	Your CaliberRM license is about to expire.
Your CaliberRM login password will expire in n days. Do you want to change it now?	Your password is about to expire.
The requirement version does not exist.	You requested a requirement version that does not exist.

Warning Message	Meaning
Depth out of range.	The client passed an invalid argument to the server.
Requirement ID already used.	The client tried to create a requirement with a duplicate ID.
Invalid list position.	The client passed an invalid argument to the server.

General Message	Meaning
Unknown attribute type.	CaliberRM cannot recognize the type of an attribute.
User not logged in.	The operation failed because the connected user is not logged in.
Last transaction may be incomplete, please check your work.	Due to network or server difficulties the last operation did not complete.
Invalid Filter type	The server could not understand the request. Contact Borland support.
The database rejected a request.	The database rejected a request.
The object is not reserved.	Your operation failed because the requirement or other object was not locked first.
Unmatched user defined type and value.	The client sent the server a mismatch of data.
An error has occurred in a plug in adapter.	Some error occurred with a plug in adapter.
Caliber Internal Error: 93-U	Some error unknown to the system has occurred.

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Appendix B: Export to Access Tables

Baseline

Field Name	Type	Size
id_number	Number	4
baseline_type	Text	255
name	Text	255
description	Text	255
email_addr	Text	255
baseline_lock_status	Text	255

Custom-Tab UDA Map

Field Name	Type	Size
req_type_id_ number	Number	4
name	Text	255
UDA_id_number	Number	4

Document Reference

Field Name	Type	Size
document_ reference	Number	4
id_number	Number	4
file	Text	255
description	Memo	N/A

Custom Tab

Field Name	Type	Size
req_type	Number	4
name	Text	255

Department

Field Name	Type	Size
id_number	Number	4
status	Integer	2
name	Text	255
description	Memo	N/A

Discussion

Field Name	Type	Size
requirement_id	Number	4
subject	Text	255
date	Date/Time	8
user_id	Text	255
body	Memo	N/A
depth	Number	4

Glossary

Field Name	Type	Size
term_name	Text	255
definition	Text	255

Group

Field Name	Type	Size
id_number	Number	4
group	Text	255

Member

Field Name	Type	Size
id_number	Number	4
group	Text	255
member	Text	255

Project

Field Name	Type	Size
id_number	Number	4
project_name	Text	255
description	Memo	N/A
email_addr	Text	255
test_director_ integration_enabled	Yes/No	1
select_enterprise_ integration_enabled	Yes/No	1
scm_integration_ enabled	Yes/No	1

ProjectBaselineMap

Field Name	Type	Size
project_id_number	Number	4
baseline_id_ number	Number	4

ProjectGroup-SecurityProfileMap

Field Name	Type	Size
group_id	Number	4
security_profile_id_ number	Number	4

ProjectGroup-SecurityProfileMap

Field Name	Type	Size
group_id	Number	4
user-id	Number	4
project_id_number	Number	4

Requirement Change

Field Name	Type	Size
id_number	Number	4
revision_index	Number	4
field_id	Text	255
old_value	Memo	N/A
new_value	Memo	N/A

Requirement Revision

Field Name	Type	Size
id_number	Number	4
revision_index	Number	4
index	Text	255
rev_number	Text	255
user_name	Text	255
date_name	Text	255

RequirementTypeUDA-Map

Field Name	Type	Size
req_type_id_number	Number	4
uda_id_number	Number	4

Requirement Info

Field Name	Type	Size
id_number	Number	4
name	Text	255
type	Text	255
owner	Text	255
status	Text	255
priority	Text	255
version	Text	255
description	Memo	N/A
validation	Memo	N/A
tag	Text	255
hierarchy	Text	255
index	Number	4
name_tag	Text	255

Requirement Type

Field Name	Type	Size
id_number	Number	4
version	Number	4
name	Text	255
description	Memo	N/A
tag	Text	6
id_number	Number	4

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SecurityProfile

Field Name	Type	Size
id_number	Number	4
name	Text	255
description	Memo	N/A

SecurityProfile-Requirement Type

Field Name	Type	Size
sec_profile_id_number	Number	4
req_type_id_number	Number	4
access	Text	255
delete	Text	255

SecurityProfile-UDA

Field Name	Type	Size
sec_profile_id_ number	Number	4
req_type_id_ number	Number	4
uda_id_number	Number	4
access	Text	255

Trace From

Field Name	Type	Size
trace_from_id_ number	Number	4
id_number	Number	4
from_name	Text	255
suspect	Text	255

Trace To

Field Name	Type	Size
trace_to_id_number	Number	4
id_number	Number	4
from_name	Text	255
suspect	Text	255

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UDA

Field Name	Type	Size
id_number	Number	4
name	Text	255
description	Memo	N/A
type	Text	255
causes_version_ change	Yes/No	1
inherit_inital_value_ from _parent	Yes/No	1
change_makes_ traceability_links_ suspect	Yes/No	1
system_attribute	Yes/No	1
mandatory_set_on create	Yes/No	1

UDA Float Info

Field Name	Type	Size
uda_id_number	Number	4
min_value	Double	4
max_value	Double	4
default_value	Double	4

UDA Boolean Info

Field Name	Type	Size
uda_id_number	Number	4
presentation_type	Text	255
true_label	Text	255
false_label	Text	255
default_value	Yes/No	1

UDA Duration Info

Field Name	Type	Size
uda_id_number	Number	4
granularity	Text	255
min_value	Number	4
max_value	Number	4

UDA Group Info

Field Name	Type	Size
uda_id_number	Number	4
is_expandable_list	Yes/No	1
selection_item	Number	4
default_value	Number	4

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UDA Group List Default Info

Field Name	Type	Size
uda_id_number	Number	4
is_expandable_list	Yes/No	1
max_groups_in_list	Number	4
default_item	Number	4

UDA Group List Selection Info

Field Name	Type	Size
uda_id_number	Number	4
is_expandable_list	Yes/No	1
max_groups_in_list	Number	4
selection_item	Number	4

UDA Long Info

Field Name	Type	Size
uda_id_number	Number	4
min_value	Number	4
max_value	Number	4
default_value	Number	4

UDA Multiple Selection List Info

Field Name	Type	Size
uda_id_number	Number	4
ordinality	Number	4
selection_item	Text	255

UDA Multiple Selection List Default

Field Name	Type	Size
uda_id_number	Number	4
default_item	Number	4

UDA Single Selection List Info

Field Name	Type	Size
uda_id_number	Number	4
presentation_type	Text	255
ordinality	Number	4
selection_item	Text	255
default_item	Number	4

UDA Text Field

Field Name	Type	Size
uda_id_number	Number	4
min_length	Number	4
max_length	Number	4
num_lines_displayed	Number	4
default_value	Text	255

UDA Text Line

Field Name	Type	Size
uda_id_number	Number	4
min_length	Number	4
max_length	Number	4
input_mask	Text	255
default_value	Text	255

UDA User

Field Name	Type	Size
uda_id_number	Number	4
is_expandable_list	Yes/No	1
selection_item	Number	4
default_item	Number	4

UDA User List Selection Info

Field Name	Type	Size
uda_id_number	Number	4
is_expandable_list	Yes/No	1
selection_item	Number	4

UDA User List Default

Field Name	Type	Size
uda_id_number	Number	4
is_expandable_list	Yes/No	1
default_value	Number	4

UDA Date Info

Field Name	Type	Size
uda_id_number	Number	4
min_time	Number	4
max_time	Number	4
default_value	Text	255

UDA Values

Field Name	Type	Size
UDA_id_number	Number	4
min_length	Number	4
max_length	Number	4
input_mask	Text	255

User

Field Name	Type	Size
id_number	Number	4
user_id	Text	255
first_name	Text	255
last_name	Text	255
email_addr	Text	255
department	Number	4
location	Text	255
phone_num	Text	255
fax_num	Text	255
pager_num	Text	255
must_change_ password	Yes/No	1
can_not_change_ password	Yes/No	1
password_never_ expires	Yes/No	1
account_disabled	Yes/No	1

User Groups

Field Name	Type	Size
id_number	Number	4
name	Text	255
description	Memo	N/A
email_addr	Text	255

User-Group Map

Field Name	Type	Size
user_number	Number	4
group _id_number	Number	4

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Appendix C: RM Export Object Formats

Each object that is available for export has within it various fields that you may choose to further customize your export. Each of these fields correspond to a field in CaliberRM. The objects you may select and their respective fields are detailed in the following tables.

PROJECT FIELD FORMAT

Field	Type	Maximum Length (characters)	Description
name	string	64	the name of the project
description	string	10,000	the project description
email_addr	string	32	the email address associated with the project
groups	string	1024	the groups assigned to the project
requirement types	string	1024	the requirement types assigned to the project

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REQUIREMENT FIELD FORMAT

Field	Type	Maximum Length (characters)	Description
order	string	9	a sequence number that identifies the requirement in the import file; not imported, but used for establishing traceability
hierarchy	string	16	determines the hierarchical structure of the requirements
type	string	64	the type of the requirement
name	string	64	the name of the requirement
description	string	10,000	the requirement description
owner	string	64	the requirement owner
test_description	string	10,000	the validation procedure of the requirement
status	string	32	the status of the requirement
priority	string	32	the priority of the requirement
document references	string	1024	document references assigned to the requirement
group_member_info	string	1024	responsible members from each group; has the following format: group1^user1~user2~|group2^user3~user4~
trace_from	string	1024	items the requirement traces from

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REQUIREMENT FIELD FORMAT

Field	Type	Maximum Length (characters)	Description
trace_to	string	1024	items the requirement traces to
uda_values	string	10,000	the values for the user-defined attributes assigned-has the following format: udalabel1:udavalue1|udalabel2:udavalue2|udalael3:udavalue3

REQUIREMENT TYPE FIELD FORMAT

Field	Type	Maximum Length (characters)	Description
name	string	64	the name of the requirement type
description	string	10,000	the description of the requirement
tag	string	6	the tag associated with the requirement type
custom tabs	string	1024	the custom tabs assigned to the requirement type-has the following format: tab1^attribute1~attribute2~attribute3~|tab2^attribute1~attribute2~attribute3~

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USER FIELD FORMAT

Field	Type	Maximum Length (characters)	Description
user_id	string	64	the user's ID
first_name	string	64	the user's first name
last_name	string	64	the user's last name
email_addr	string	64	the user's email address
dept	string	64	the user's department
location	string	64	the user's primary office location
phone_num	string	16	the user's phone number
fax_num	string	16	the user's fax number
pager_num	string	16	the user's pager number
groups	string	1024	the groups the user is assigned to- has the following format: group1|group2|group3|

UDA FILE FORMAT

Field	Type	Maximum Length (characters)	Description
name	string	64	the name of the UDA
description	string	10,000	the UDA description
type	string	64	the type of UDA

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UDA FILE FORMAT

Field	Type	Maximum Length (characters)	Description
causes_version_cha nge	string	1	indicates whether a change creates a new major version; if no, displays as a 0 in the text file, if yes, displays as a 1
inherit_initial_ value_from_ parent	string	1	indicates whether the attribute's initial value comes from parent requirement; if no, displays as a 0 in the text file, if yes, displays as a 1
change_makes_ traceability links _suspect	string	1	indicates whether a change makes traceability links suspect; if no, displays as a 0 in the text file, if yes, displays as a 1
system_attribute	string	1	not used for import
mandatory_set_on_ create	string	1	value required for new requirement
type_info	string	1024	describes the attributes for that type of UDA-format is UDA*

* To be properly formatted, this file must be created by an running an export. Borland does not advise generating this file by any other method.

GROUP FIELD FORMAT

Field	Type	Maximum Length (characters)	Description
name	string	64	the name of the group
description	string	1024	the group description
email_addr	string	64	the email address associated with the group
members	string	1024	the members of the group formatted like: user1|user2|user3|user4

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Appendix D: Document Factory Sample Templates and Outputs

SAMPLE TEMPLATES

This appendix contains sample templates with their corresponding output. Most of the templates are partial templates to show how a particular command or operator works. The generated documents have been edited to display the first entry of the generated document due to size restrictions. All of the templates reference the sample project called Automated Teller Machine.

Sample Number	Template Description
Sample 1, page 444	Full template using many commands.
Sample 2, page 446	Filter example using the logical *and* with the *in* comparison
Sample 3, page 448	Filter example using logical *and* with the *between* comparison
Sample 4, page 450	Filter example using the *like* comparison with a wildcard.
Sample 5, page 451	Filter example using the *like* comparison and the logical *or* with multiple wildcards.
Sample 6, page 453	Shows how to use the <<history>> keyword.
Sample 7, page 455	Shows how to use $Begin_History/$End_History.
Sample 8, page 457	Shows how to use the <<traces>> keyword with default string.
Sample 9, page 458	An example of how to use $Begin_Traces/$End_Traces with a specified string of identifiers.
Sample 10, page 460	An example of the $Calculate command.

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SAMPLE 1

$PROJECT{Automated Teller Machine}
Business Requirements
$BEGIN_SECTION
$FILTER{type = 'Business Requirements'}
$SORT{hierarchy}

<<hierarchy>><<name>> (<<tag>><<id_number>>)
<<description>>
<u>**Change History**</u>
$BEGIN_HISTORY
Revision **<<major_version>>.<<minor_version>> on <<datestamp>>** by
          <<user_name>>
$BEGIN_CHANGES
Item Changed:<<field_changed>>
Changed From:<<from_value>>
Changed To:<<to_value>>
$END_CHANGES
$END_HISTORY

<u>**Traces**</u>
$BEGIN_TRACES (TO_TRACES,DIRECT_TRACES,ALL_OBJECTS)
<<Trace_ReqTag>> <<Trace_Name>> <<Trace_Suspect>> <<Trace_Direction>>
<<Trace_DirectImplied>>
$END_TRACES
$END_SECTION

OUTPUT 1

Business Requirements

1 ATM Alerts (BR77)
The ATM shall maintain alerts as to the operating status.

<u>Change History</u>
Revision **1.0** on **11/18/99** by **Caliber Administrator**
Revision **1.1** on **11/18/99** by **Caliber Administrator**
Item Changed: Owner
Changed From:admin
Changed To:abaker

<u>Traces</u>
 BR78 Replenishment Alert TO Direct
 HS96 ATM Machine TO Direct
 SS100 Cash Depletion Rate TO Direct
 SS101 Paper Depletion Rate TO Direct
 SS102 Status Query TO Direct
 SS103 Alert Signal TO Direct
 BR79 Tamper Alert TO Direct
 SS104 Tamper Signal TO Direct

SAMPLE 2

$PROJECT{Automated Teller Machine}

$BEGIN_SECTION

$FILTER{type = 'Business Requirements' and id_number in (89, 90,92,77)}
<<type>>
<<hierarchy>> <<name>> (<<tag>><<id_number>>)

Owner:<<owner>>   Status:<<status>>   Priority:<<priority>>
Project Version: <<version>>

$END_SECTION

OUTPUT 2

Business Requirements
1 ATM Alerts (BR77)

Owner:abaker   Status:Submitted   Priority:High
Project Version: 1.1

Business Requirements
8 Capacity (BR89)

Owner:jandrews   Status:Accepted   Priority:High
Project Version: 1.1

Business Requirements
9 Deposit Transaction (BR90)

Owner:wpeterson   Status:Accepted   Priority:Medium
Project Version: 1.1

Business Requirements
10 Transfer Transactions (BR92)

Owner:gjones   Status:Submitted   Priority:Medium
Project Version: 1.1

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SAMPLE 3

$PROJECT{Automated Teller Machine}

 $BEGIN_SECTION

$FILTER{type = 'Business Requirements' and Start Date between #06-01-00#
      and #09-01-00#}
<<hierarchy>> <<name>> (<<tag>><<id_number>>)

Owner:<<owner>>   Status:<<status>>   Priority:<<priority>>
Project Version: <<version>>

Start Date: <<Start Date>>
$END_SECTION

OUTPUT 3

2 24x7 (BS80)

Owner:bsmith   Status:Pending   Priority:High

Project Version: 1.1

Start Date: Monday, August 07, 2000

3 Verify Balance (BS81)

Owner:fsandifer   Status:Deferred   Priority:Low

Project Version: 1.0

Start Date: Tuesday, August 15, 2000

4 Accessibility (BS82)

Owner:sbowman   Status:Accepted   Priority:Low

Project Version: 1.1

Start Date: Saturday, July 01, 2000

5 Receipt (BS84)

Owner:wpeterson   Status:Pending   Priority:High

Project Version: 1.1

Start Date: Thursday, June 29, 2000

SAMPLE 4

```
$PROJECT{Automated Teller Machine}
Automated Teller Machine

$Begin_Section
$Filter{type='Business Requirements' and hierarchy like '1' or hierarchy like '1.*'}
$Sort{hierarchy}

<<hierarchy>> <<tag>>     <<name>>
<<description>>

$End_Section
```

OUTPUT 4

AUTOMATED TELLER MACHINE

1 BR   ATM Alerts
The ATM shall maintain alerts as to the operating status.

1.1 BR   Replenishment Alert
ATMs shall send an alert to the IT department when the ATM needs replenish-
ment. When the ATM has less than a 4 hour supply of cash and receipt paper,
under normal depletion rates, the ATM will notify the IT department so the appro-
priate service person can be dispatched.

1.1 HW   Power Supply
There shall be a power supply capable of supporting a 110 volt input and a 3 Amp
load or 220 volts and a 5 Amp load.

1.2 BR   Tamper Alert
ATMs shall send an alert to the IT department when the ATM has been tampered
with. In the event that the ATM is opened without the key and security code, the
ATM will alert the IT department immediately so the appropriate action can be
taken.

SAMPLE 5

$PROJECT{Automated Teller Machine}

$BEGIN_SECTION

$FILTER{Name like '*ac*' or Name like 'a*a' or Name like '*s' }

<u><<type>></u>

<<hierarchy>> <<name>> (<<tag>><<id_number>>)

Owner: <<owner>>   **Status:** <<status>>
Priority:<<priority>>

Project Version: <<version>>

$END_SECTION

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OUTPUT 5

Business Requirements

1 ATM Alerts (BS77)

Owner: abaker   **Status:** Submitted   **Priority:** High

Project Version: 1.1

Business Requirements

4 Accessibility (BS82)

Owner: sbowman   **Status:** Accepted   **Priority:** Low

Project Version: 1.1

Hardware Requirements

1 ATM Machine (HS96)

Owner: wpeterson   **Status:** Accepted   **Priority:** High

Project Version: 2.1

Software Requirements

11.4 SF Capacity (SS114)

Owner: vcarter   **Status:** Accepted   **Priority:** Medium

Project Version: 1.2

Software Requirements

14 Withdrawal from Account (SS118)

Owner: wpeterson   **Status:** Submitted   **Priority:** Medium

Project Version: 1.1

SAMPLE 6

$PROJECT{Automated Teller Machine}

$BEGIN_SECTION

$FILTER{type = 'Business Requirements'}

<<hierarchy>> <<name>> (<<tag>>)

<<history>>

$END_SECTION

OUTPUT 6

1.1 Replenishment Alert (BS)

Revision #: 1.0　　　Changed by:admin

Date/Time:Thursday, November 18, 1999 12:56:22 PM

Comment:

Revision #:1.1　　　Changed by:admin

Date/Time:Thursday, November 18, 1999 02:13:46 PM

Comment:

Owner

From Value: admin

To Value: gjones

Revision #: 1.2　　　Changed by:admin

Date/Time:Thursday, November 18, 1999 04:37:40 PM

Comment:

Owner

From Value: gjones

To Value: abaker

1.2 Tamper Alert (BS)

Revision #: 1.1　　　Changed by:admin

Date/Time:Thursday, November 18, 1999 02:13:44 PM

Comment:

Owner

From Value:admin

To Value:jandrews

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SAMPLE 7

$PROJECT{Automated Teller Machine}

ATM BUSINESS REQUIREMENTS

$BEGIN_SECTION

$FILTER{type = 'Business Requirements'}

<<name>> (<<tag>>)

$BEGIN_HISTORY

Rev#: <<major_version>>.<<minor_version>>

Date: <<datestamp>> **Time:**<<timestamp>>

User: <<user_name>>

$BEGIN_CHANGES

Changed Field: <<field_changed>>

From: <<from_value>>

To: <<to_value>>

$END_CHANGES

$END_HISTORY

$END_SECTION

OUTPUT 7

ATM BUSINESS REQUIREMENTS

Replenishment Alert (BS)
Rev#: 1.0
Date: 11/18/99 **Time:** 12:56:22 PM
User: Caliber Administrator

Rev#: 1.1
Date: 11/18/99 **Time:** 02:13:46 PM
User: Caliber Administrator
Changed Field: Owner
From: admin
To: gjones

Rev#: 1.2
Date: 11/18/99 **Time:** 04:37:40 PM
User: Caliber Administrator
Changed Field: Owner
From: gjones
To: abaker

Tamper Alert (BS)
Rev#: 1.0
Date: 11/18/99 **Time:** 12:58:24 PM
User: Caliber Administrator

SAMPLE 8

$PROJECT{Automated Teller Machine}

$BEGIN_SECTION

$FILTER{type = 'Business Requirements'}

<<hierarchy>> <<name>> (<<tag>><<id_number>>)

<<Traces>>

$END_SECTION

OUTPUT 8

1.2 Tamper Alert (BS79)

SS103 Alert Signal Requirement Automated Teller Machine Direct TO

SS98 Service Mode Requirement Automated Teller Machine Direct TO

BS77 ATM Alerts Requirement Automated Teller Machine Direct FROM

SS104 Tamper Signal Requirement Automated Teller Machine Direct TO

2 24x7 (BS80)

SS98 Service Mode Requirement Automated Teller Machine Direct TO

SS102 Status Query Requirement Automated Teller Machine Direct TO

SAMPLE 9

$PROJECT{Automated Teller Machine}

$BEGIN_SECTION

$FILTER{type = 'Business Requirements'}

<<hierarchy>> <<name>> (<<tag>><<id_number>>)

$Begin_Traces
   Requirement Tag: <<Trace_ReqTag>>
   Trace Name: <<Trace_Name>>
   Trace ObjectType: <<Trace_ObjectType>>
   Trace_Project: <<Trace_Project>>
   Trace_Suspect: <<Trace_Suspect>>
   Trace_Directimplied: <<Trace_DirectImplied>>
   Trace_Direction: <<Trace_Direction>>

$End_Traces

$END_SECTION

OUTPUT 9

1.1 Replenishment Alert (BS78)

Requirement Tag: SS99
Trace Name: Replenishment Prediction
Trace Object Type: Requirement
Trace Project: Automated Teller Machine
Trace Suspect:
Trace Direct/Implied: Direct
Trace Direction: TO

Requirement Tag: SS100
Trace Name: Cash Depletion Rate
Trace Object Type: Requirement
Trace Project: Automated Teller Machine
Trace Suspect:
Trace Direct/Implied: Direct
Trace Direction: TO

1.2 Tamper Alert (BS79)

Requirement Tag: SS103
Trace Name: Alert Signal
Trace Object Type: Requirement
Trace Project: Automated Teller Machine
Trace Suspect:
Trace Direct/Implied: Direct
Trace Direction: TO

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SAMPLE 10

$PROJECT{Automated Teller Machine}

ATM SOFTWARE REQUIREMENTS

$BEGIN_SECTION

$FILTER{type = 'Software Requirements'}

<<hierarchy>> <<name>> (<<tag>><<id_number>>)

Owner:<<owner>>   **Status:**<<status>>   **Priority:**<<priority>>

Project Version: <<version>>

$CALCULATE{Low Effort + Expected Effort as TotalEffort1}

Estimates:

Low Effort:<<Low Effort>> + Expected Effort: <<Expected Effort>> = Total Effort <<TotalEffort1>>

$END_SECTION

OUTPUT 10

ATM SOFTWARE Requirements

1 Service Mode (SS98)

Owner: fsandifer   **Status:** Submitted   **Priority:** Medium

Project Version: 1.1

Estimates: Low Effort:4 + Expected Effort: 5 = Total Effort: 9

2 Replenishment Prediction (SS99)

Owner: jandrews   **Status:** Accepted   **Priority:** Medium

Project Version: 1.1

Estimates: Low Effort:5 + Expected Effort: 9 = Total Effort 14

3 Cash Depletion Rate (SS100)

Owner: amitchell   **Status:** Accepted   **Priority:** Medium

Project Version: 1.1

Estimates: Low Effort:12 + Expected Effort: 15 = Total Effort27

4 Paper Depletion Rate (SS101)

Owner: gjones   **Status:** Submitted   **Priority:** Medium

Project Version: 1.1

Estimates: Low Effort:2 + Expected Effort: 5 = Total Effort 7

Appendix E: CaliberRM Diagnostics Tool

The CaliberRM Diagnostic Tool allows you to determine the current configuration of your CaliberRM system, such as the status of the server, the status of the database and the server owner. This information helps you perform troubleshooting to find the cause of any communication problems that may occur when you connect to the CaliberRM or Framework Administrator servers.

Note: Please run the diagnostics check, and have the results available before calling Borland's Product Support. See "Borland Support" on page 7.

DIAGNOSTICS

To run the Diagnostic Tool:

1. From the Windows **Start** menu, select **Programs > CaliberRM > Diagnostic Tool**.

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The **Caliber Diagnostic Tool** dialog box is displayed.
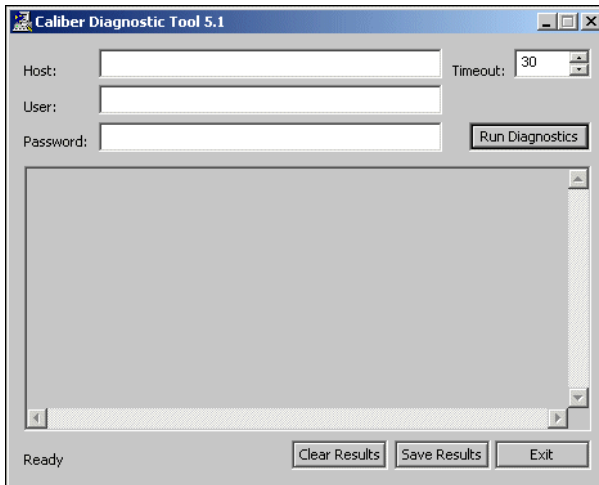
2. In the **Host** field, enter the name of the server on which you want to perform a diagnostic check.

3. Enter your userid and password in the appropriate boxes.

4. Click the **Run Diagnostics** button.

The diagnostics check begins, and the results are displayed.

You can save the results as a text file by clicking the **Save Results** button. The results can be printed (e.g., through Notepad) before calling Borland support, emailed to Borland's Product Support or compared against the results of other tests to resolve problems and discrepancies.

5. Click **Exit** to close the **Diagnostics Tool** dialog box.

Glossary

Attributes: Characteristics that help define requirements. For example, all requirements contain the attribute "Priority", indicating the priority of the requirement. CaliberRM supports both system and user-defined attributes.

Automatic Notification: A feature of CaliberRM that provides email notification to a user that a requirement that he/she is assigned to has changed.

Baseline: A static snapshot of a group of requirements or a project at specific versions or a specific point in time.

CaliberRBT: A functional test case design system that helps quality assurance teams design and develop the minimum number of test cases that provide the maximum test coverage. The result is a more complete testing process, with fuller coverage.

CaliberRM: A collaborative, Internet-based requirements management system that enables project teams to deliver higher quality applications that meet end-user specifications.

Custom Tabs: A CaliberRM feature that allows a CaliberRM Administrator to create and delete custom tabs that contain user-defined attributes.

Custom Tools: A CaliberRM feature that allows the user to create custom tools, such as a link to Word, specific to the CaliberRM project. Custom tools can be created, given a user-chosen icon and placed at a specific location on the CaliberRM toolbar for accessibility.

Enterprise: Generally refers to the entire global organization. In terms of CaliberRM security, enterprise level restrictions set the policy for *all* user accounts. User account settings allow you to supersede global settings on specific accounts.

Export/Import Projects: A CaliberRM feature that allows the user to export a project from a server into an ASCII file to be imported later into the same or another server. The user may also import a project to a server by specifying the path/name of the import data from a directory created by the export facility.

Field Changed Indicator: The indicator represented by an asterisk (*) that is displayed next to fields that have been changed for a requirement in CaliberRM.

Framework Administrator: Controls all administrative functions related to projects, users, groups, security and automatic notification.

Glossary: A CaliberRM feature that allows the user to create, define and store project-specific terms.

Group: A group is a set of users with similar responsibilities (i.e., Managers, Developers, Engineers, Marketing, etc.).

Hierarchical Numbers: These numbers, displayed to the left of the requirement name, are dynamic and are determined by the requirement's placement in the requirement list. For example, for each requirement type, there is a requirement numbered 1 whose children are numbered 1.1, 1.2 and so on.

Project: Any application or system under development. Projects consist of several layers of information, including users and groups, requirement types and requirements.

Reference Documents: Documents that CaliberRM stores that provide additional information for a requirement. Referenced documents may include a specifications document, meeting notes, a screen shot or anything else that might be of use in defining requirements.

Registered Interest: A CaliberRM feature that gives the user the option to receive email notification when a change is made to a requirement to which the user is not assigned.

Requirements: Specifications that the application or system being built must meet. Requirements can originate from many sources such as business rules, business process models, product marketing, prototypes, development meetings and more.

Requirement ID Numbers: These numbers, also called **Serial** numbers, are displayed to the right of the requirement name. These numbers are static and are automatically generated by CaliberRM. Each ID number is unique in the system. If a requirement is deleted, that ID number will not be reused.

Requirement Types: High-level groups of requirements. Requirement types are typically classified by their function (i.e., Marketing, Functional, GUI, Software, Testing, etc.).

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Select Enterprise: An object modeling tool from Princeton Softech.

Security Profile: Determine access privileges. These profiles are then assigned to groups within each project through the Framework Administrator.

Software Configuration Management (SCM): Development tools that track changes and provide version control for source code or other file types.

System Attributes: An attribute that CaliberRM automatically assigns to each requirement. System attributes that CaliberRM assigns are Priority and Status. Users set the values for these attributes to define requirements.

TestDirector: A test planning and management tool from Mercury Interactive.

Test Wizard: A CaliberRM feature that allows the user to create tests for any requirement by automating the process of creating tests in TestDirector.

Traceability: CaliberRM supports requirement traceability to allow you to see requirement relationships easily. Requirements may trace to or trace from other requirements, as well as object modeling and test entities. Suspect links, which indicate a change in a requirement that may affect other objects, are shown when a requirement is changed.

Unread Discussion Indicator: An indicator in CaliberRM that notifies a user when a requirement has a discussion item that has not been read.

Unread Discussion List: A pop-up list in CaliberRM that shows all unread discussions, allowing the user to view all requirements in the currently selected project that have unread discussions.

Unread Message Indicator: An indicator that notifies the user of an unread message on the Discussion tab of a selected requirement or project. The indicator is illuminated green when the message has not been read. Once the message has been read, the indicator becomes gray.

User-Defined Attributes: An attribute that a user defines and assigns to a custom tab in a requirement type.

User: Any person who has access to and uses CaliberRM or the Framework Administrator system. Users can be developers, managers, testers, CEOs and others.

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User Identity: The display of a user's name and department assignment in a tool tip box when the cursor is placed over the user ID in the Framework Administrator or CaliberRM.

Validation: Validation procedures help determine how to test the application to ensure that the requirements are implemented correctly.

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