SERENA®

DIMENSIONS® RM 12.1

RM Browser User's Guide

Serena Proprietary and Confidential Information

Publication date: January 2013

Table of Contents

Preface

This document describes how to use the RM Browser client for Serena® Dimensions® RM, a comprehensive requirements management package that allows development teams to capture, engineer, and manage requirements throughout the entire product lifecycle.

Objective

The purpose of this document is to describe how to use Dimensions RM after the product is installed.

Audience

This document is intended for members of project teams who use Dimensions RM to create, manage, and track requirements during the lifecycle of a project.

License and Copyright Information for Third-Party Software

License and copyright information for third-party software included in this release can be found as part of the software download available at:

http://www.serena.com/support

Chapter 1

RM Browser Basics

Main Pages of the RM Browser Interface

RM Browser includes the following main pages:

- **Home:** Is where you select the Category, Document, Report, Collection, or Baseline that you wish to work in. Once the desired item is selected, select an operation from the Actions pane to open the item in the relevant dialog or work page. To display the Home page, click the root category in the project bread crumb:

- **My Work**: By default, this page displays items that you have recently worked on. You can customize this page to determine which items are displayed, and define queries to populate more sections. Click the **My Work** button to display this page.

- **Work Pages:** Are where you view and work on groups of requirements. Each page includes the features specific to the type of group that you selected on the Home page. There are the following types of work pages:

  - **Category**: Displays the requirements included in the category or categories that you selected on the Home page. You can view the requirements in Editable Grid, Grid, or Form view. This page includes Quick Search, so you can quickly find a specific requirement or group of requirements within the category.

  - **Document**: Displays a document-like presentation of requirements, with a table of contents, chapters, and subchapters. Requirements and subrequirements are contained within the chapters and subchapters. Microsoft® Word documents that you have imported into RM are displayed on this page. You can add, delete, move, and edit chapters and requirements. The left pane is the navigation tree that represents the table of contents. The right pane is the detail pane, and displays information based on what you selected in the navigation tree. You can view requirements in a grid format that displays multiple requirements in a tabular style, and a paragraph format that displays multiple requirements in a paragraph style.

  - **Class Report:** Displays the results of queries within a single class. You can view the requirements in Editable Grid, Grid, or Form view.

  - **Relationship Report:** Relationships define interactions between classes of requirements, and these are defined by the administrator in the project schema. This page displays the results of queries built around those relationships. You can view the requirements in Editable Grid, Grid, or Form view.

  - **Traceability Report**: Traceability is a way to analyze the linkages between requirements. The left pane is the traceability tree with a top-level class from which related classes and requirements flow in a hierarchical format. The right pane displays information based on what you selected in the traceability tree.

  - **Collection:** Displays the requirements included in the collection that you selected on the Home page. You can view the requirements in Editable Grid, Grid, or Form view.

  - **Baseline:** Displays the requirements included in the baseline that you selected on the Home page. You can view the requirements in Editable Grid, Grid, or Form view.

General Navigation and Controls in RM Browser

See the following subsections for an overview of the main navigational and control elements of the RM Browser interface:

Link Bar

This appears at the upper right of all RM Browser pages. It includes the following links:

- **Welcome, *UserID*:** This opens the Change Password page. See "Changing Your Password" on page 37.
- **Help:** This opens the RM Browser help. See "Getting Help" on page 38.
- **Settings:** This opens the User Settings dialog, where you can override the project settings for General features, like how long until an idle RM Browser session logs out; what attributes are displayed in a Quick Search; how Documents are published and loaded; and whether to automatically load the most recently run Traceability report. See Chapter 2, "Configuring User Settings" on page 43.
- **About:** This opens the About Dimensions RM dialog. It displays information such as the version of Dimensions RM and the operating system of the server. See "Viewing Version, System, and Contact Information" on page 39.
- **Log Out:** This ends your RM Browser session and displays the Log In page. See "Logging Out" on page 38.

Menu Bar

This appears at the upper left of all RM Browser pages. It includes the following menus and buttons:

- **New:** This menu opens the dialogs that create new items, such as requirements, reports, documents, collections, and baselines.
- **My Work:** This button opens the My Work page, which displays items you have recently worked on, and/or the results of various queries you have defined for this purpose. To configure the My Work page, see "Customizing My Work Page" on page 47.

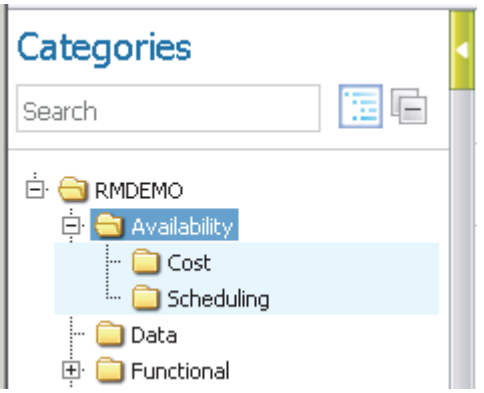
- **Import:** This menu opens the dialogs that import external content, such as CSV, Microsoft Word, and XML files into RM requirements. See Chapter 7, "Importing Requirements" on page 137.
- **Administration:** This menu opens dialogs for administrative functions, such as managing and organizing categories, breaking user locks on documents and requirements, and configuring project-level settings for RM Browser behavior (which is the behavior all users see unless they override it with their own local user settings). See Chapter 8, "Administration" on page 149.
- **Containers:** This menu opens dialogs that manage, move, and compare containers. See Chapter 6, "Managing Containers and Collections" on page 129.

Project Bread Crumb

This appears at the upper left of all RM Browser pages, just below the Menu Bar. It includes the following elements:

- The left-most element displays the name of the RM project. Clicking this element opens the Home page.
- The second element is the name of the category that was selected on the Home page. If the selection includes subcategories, the name of the top-most selected category is displayed. If the root category was selected, then the second element will be the same as the first element: the name of the RM project.
- The third element identifies the type of item that is currently open in the work page. For example, it would say **Relationship** if a relationship report is open.
- The fourth element is the name of the item that is currently open in the work page. It includes a drop-down list from which you can open other items of this type., if any others exist in the currently selected category.

Categories Pane



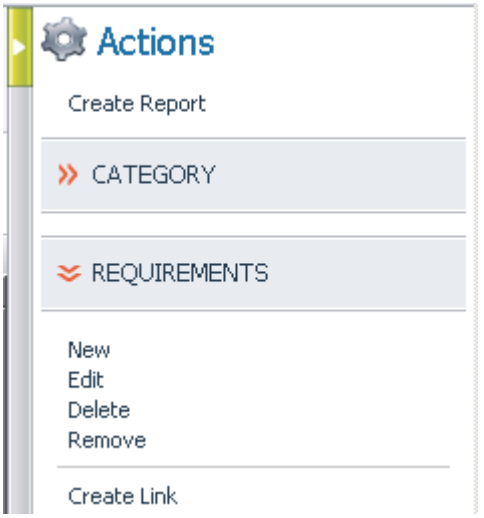
This appears on left side of the Home page and includes the following elements:

- **Expand/Collapse:** This button expands or collapses the Categories pane.
- **Search:** This field limits the display in the category tree to those categories that match the search string. The search is dynamic, and increasingly narrows the

displayed results as you enter more characters. Potential matches are shown in bold. To return to displaying the full category tree, delete the string from the Search field or click the **X** button in the Search field.

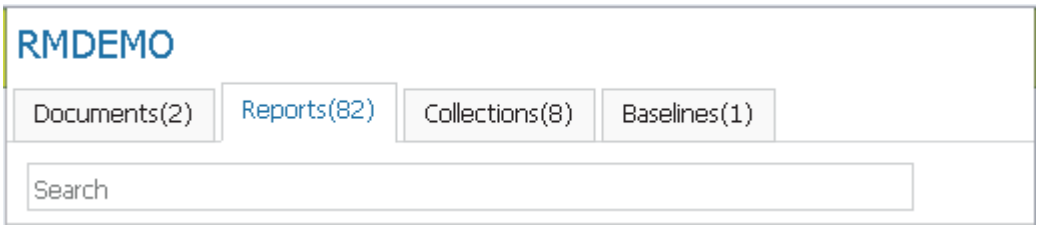
- **Include sub categories:** When colored, this toggle button indicates that sub categories below the selected category will be included. When grayed out, it indicates that only the selected category will be included.
- **Collapse all sub categories:** This button collapses any open branches in the category tree, so only the first level of categories below the root are displayed.

Actions Pane



This appears on the right side of all RM Browser pages. It lists the Actions that are possible in the current context. These actions are arranged in expandable/collapsible groups. If an action is grayed out, either you do not have permission to perform this action, or an item of the relevant type is not currently selected. Like the Categories pane, it includes an Expand/Collapse button to show or hide the pane.

Selection Pane



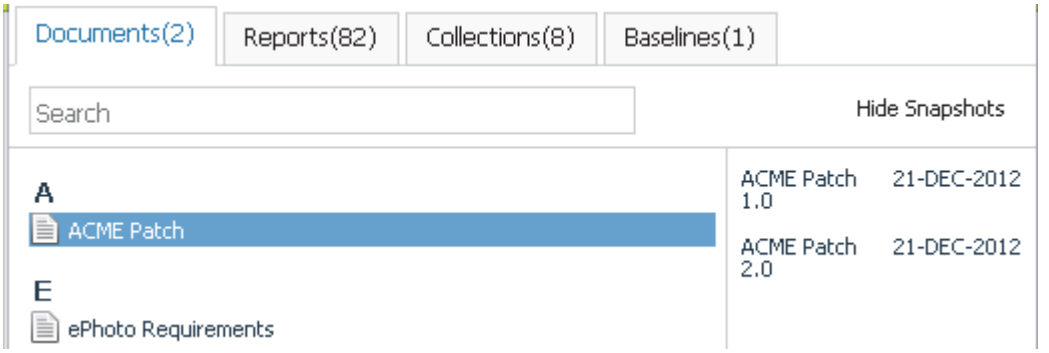
This appears in the middle of the Home page. It is where you select the document, report, collection, or baseline that you wish to work in. It includes the following elements:

- The top left element is the name of the category that was selected on the Home page. If the selection includes subcategories, the name of the top-most selected category is displayed.
- **Search:** This field limits the display in the active tab to those items that match the search string. The search is dynamic, and increasingly narrows the displayed results

as you enter more characters. To return to displaying all items, delete the string from the Search field or click the **X** button in the Search field.

- **Tabs:** A number in the title of each tab indicates how many of each item type exist in the selected category. Double-click an item to open it in the relevant work page, or select the item and then click an action in the Actions pane. See the following subsections for a description of each tab.

Documents Tab

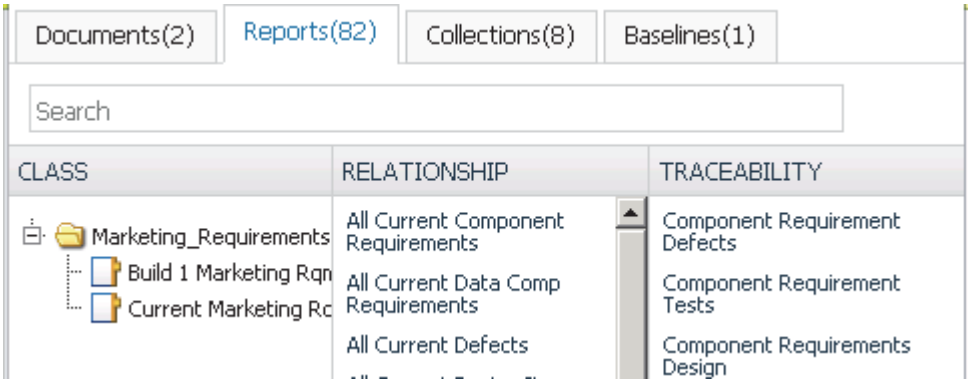


This is an alphabetical listing of the RM documents in the currently selected category or categories, as filtered by the Search field.

Show Snapshots/Hide Snapshots: This toggles the display of the Snapshots column, which displays any snapshots of the currently selected document.

Double-click an item to open it in the Document work page, or select the item and then click an action in the Actions pane. See Chapter 4, "Working with Documents" on page 83.

Reports tab



This is an alphabetical listing of the reports in the currently selected category or categories, as filtered by the Search field. It contains separate columns for each type of report: Class, Relationship, and Traceability. The Class list includes a folder for each class that has reports. The other two lists are simple alphabetical lists.

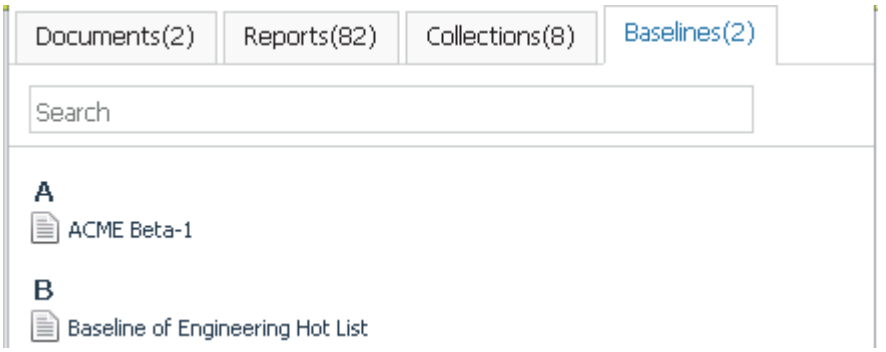
Double-click an item to open it in the relevant report work page, or select the item and then click an action in the Actions pane. See Chapter 5, "Working with Reports" on page 117.

Collections Tab

This is an alphabetical listing of the collections in the currently selected category or categories, as filtered by the Search field.

Double-click an item to open it in the Collections work page, or select the item and then click an action in the Actions pane.

Baselines Tab



This is an alphabetical listing of the baselines in the currently selected category or categories, as filtered by the Search field.

Double-click an item to open it in the Baselines work page, or select the item and then click an action in the Actions pane.

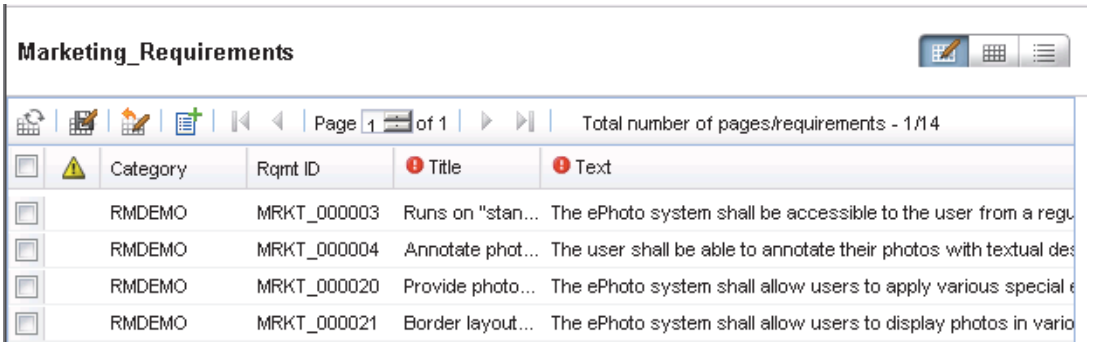
Editable Grid, Grid, and Form Views

The work pages, except for Documents and Traceability, include the ability to toggle between the following views of the requirements they contain: Editable Grid, Grid, and Form. Use the view buttons to select the desired view:

- **Editable Grid:**  "Editable Grid View" on page 18
- **Grid:**  "Grid View" on page 19
- **Form**:  "Form View" on page 20

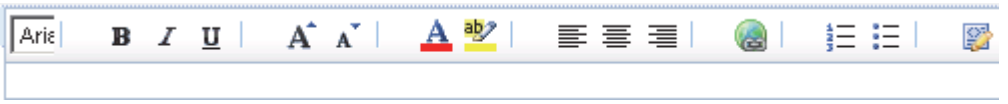
NOTE If the query includes more than one class, the Form view is not available.

Editable Grid View

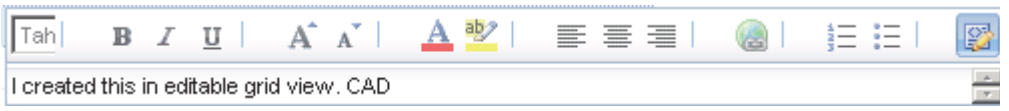


This is a tabular view of requirements with which you can directly edit requirement attributes. It includes the following controls:

- **Refresh:** This button repopulates the view with fresh data from the database.
- **Apply changes:** This button saves the changes you have made. Unsaved changes have a red triangle in the upper left.
- **Undo changes:** This button restores the original contents of the view, removing any unsaved changes you have made.
- **Create new requirement:** This button adds a blank row to the view, into which you enter the attributes the new requirement that you wish to create. System attributes, such as the requirement ID number, will be populated once you click the **Apply changes** button.
- **Page Controls:** If the view contains multiple pages of content, you can select or enter a specific page to view in the **Page** field. Or you can browse through the pages in sequence with the **First Page**, **Previous Page**, **Next Page**, and **Last Page** controls.
- **Formatting Tool Bar:** If the attribute can accept text formatting, this tool bar appears in the cell when you double-click the cell for editing. It has two modes. To toggle between them, click the **Source Edit** ( ) button.
  - **Format:** In this mode you can apply formatting to the text, but you cannot edit the text.

  - **Source Edit:** In this mode you can edit the text, but you cannot apply formatting to the text.

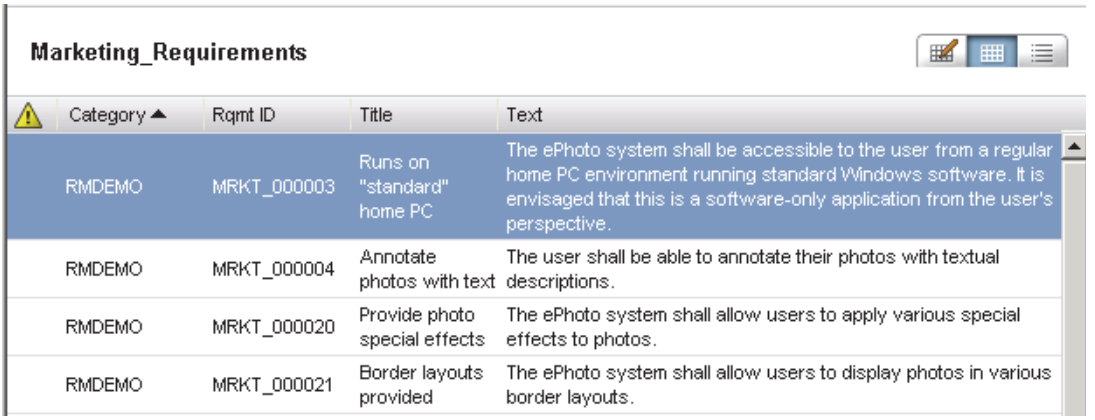
Click a column header to sort the requirements by that attribute. To edit an attribute, double-click it; the attribute's cell will then become editable. If the attribute is a selection from a predefined list, you will be presented with a drop-down list to select from. If the

attribute is a text value, a cursor will appear in the cell so you can edit the text as needed. If the attribute can accept text formatting, the Formatting Tool Bar appears in the cell.

TIP To set an attribute to the same value across multiple requirements, select the desired requirements, double-click one instance of the attribute, set it to the desired value, and press the `Enter` key.

To perform other actions on the currently selected requirement or requirements, select the desired action from the Requirements group of the Actions pane. To perform an action on the entire grouping of requirements, select an action from the Actions pane group that corresponds to the group type you are working on, for example: Category, Report, Collection, etc.

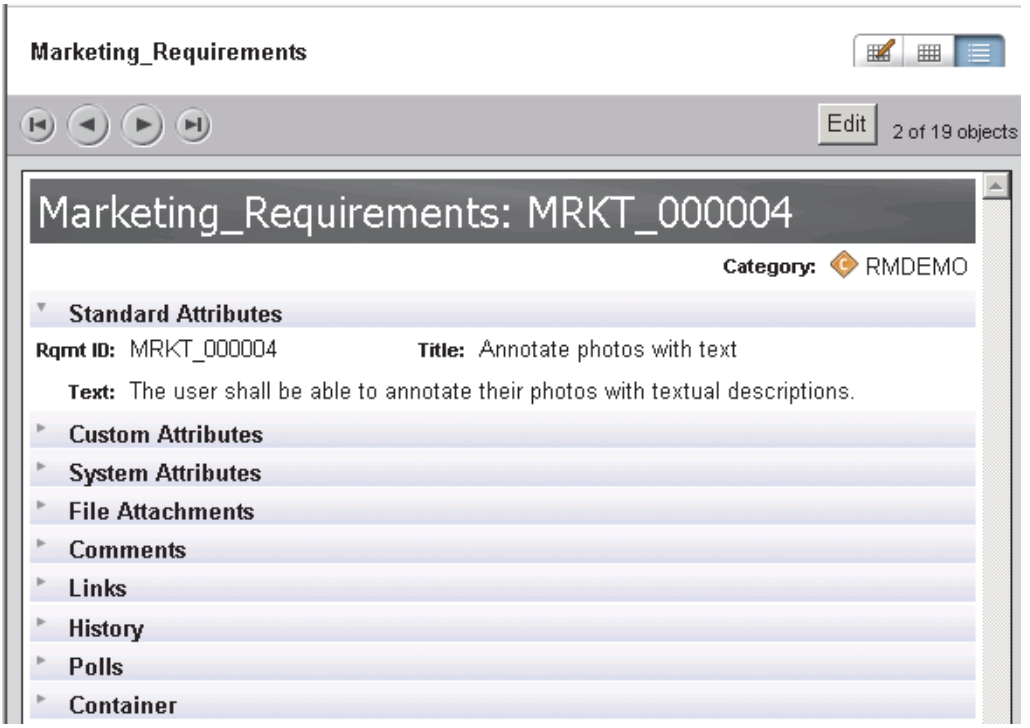
Grid View



This is a tabular view of requirements. Click a column header to sort the requirements by that attribute. To open a requirement for editing, double-click it; the requirement opens in the Edit Attributes dialog (see "Editing a Requirement" on page 53).

To perform other actions on the currently selected requirement or requirements, select the desired action from the Requirements group of the Actions pane. To perform an action on the entire grouping of requirements, select an action from the Actions pane group that corresponds to the group type you are working on, for example: Category, Report, Collection, etc.

Form View



This view displays the attributes of one requirement at a time. Attributes are grouped into expandable/collapsible sections by type. You can browse through the requirements in sequence with the **First**, **Previous**, **Next**, and **Last** controls. To edit the current requirement, click the **Edit** button; the requirement opens in the Edit Attributes dialog (see "Editing a Requirement" on page 53).

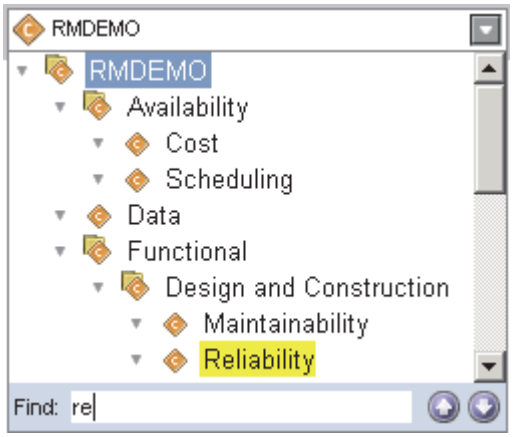
To perform other actions on the currently selected requirement, select the desired action from the Requirements group of the Actions pane. To perform an action on the entire grouping of requirements, select an action from the Actions pane group that corresponds to the group type you are working on, for example: Category, Report, Collection, etc.

Common Dialog Controls

See the following subsections for an overview of the control elements common to many RM Browser dialogs:

- "Category Drop-Down List" on page 21
- "HTML Text Formatting Toolbar" on page 21
- "Attribute Constraints Tab" on page 26
- "Relationship Constraints Tab" on page 29
- "Display Options Tab" on page 32

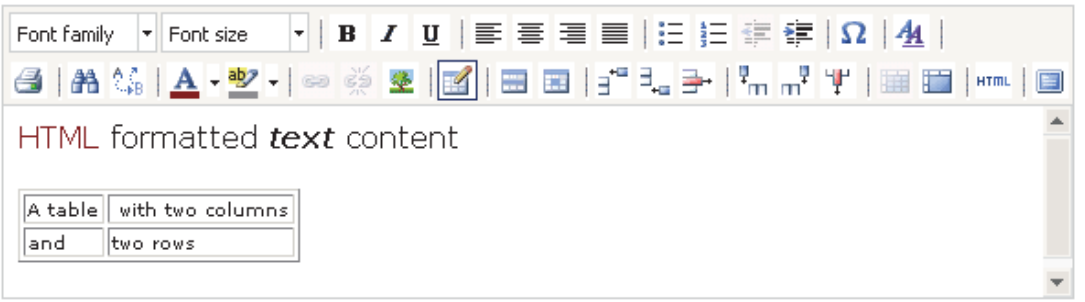
Category Drop-Down List



Click the collapsed list to expand it and access the following features:

- **Find:** Enter a search string to dynamically find categories that match it.
- **Previous/Next:** Use these buttons to highlight the matches one at a time. An unselected match is highlighted with yellow. A selected match is highlighted with green.
- To select multiple categories, press the CTRL key when selecting the categories. Selected categories are highlighted with blue. Multi-select is available only for some operations, such as creating reports.
- To select all sub-categories under a parent category:
  - **a** Click the desired parent category.
  - **b** Shift-click the parent category.

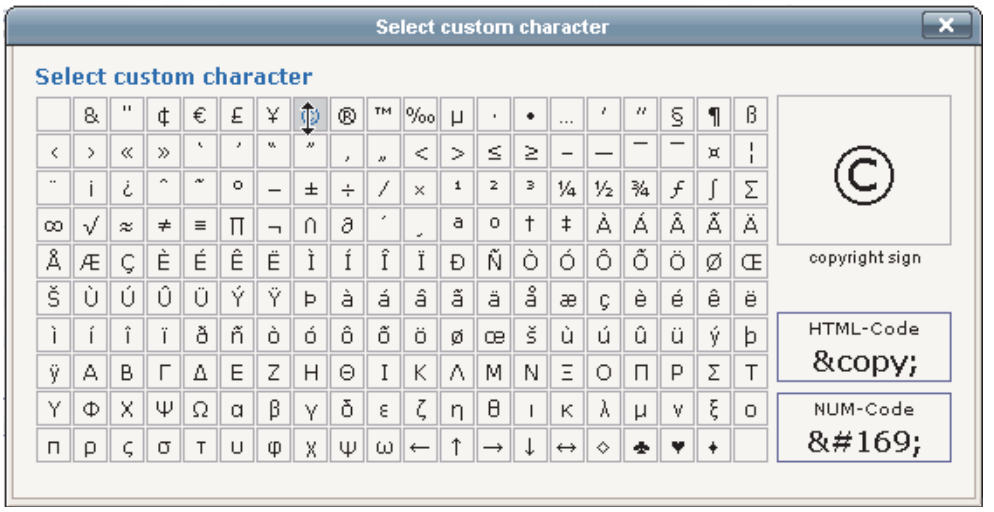
HTML Text Formatting Toolbar



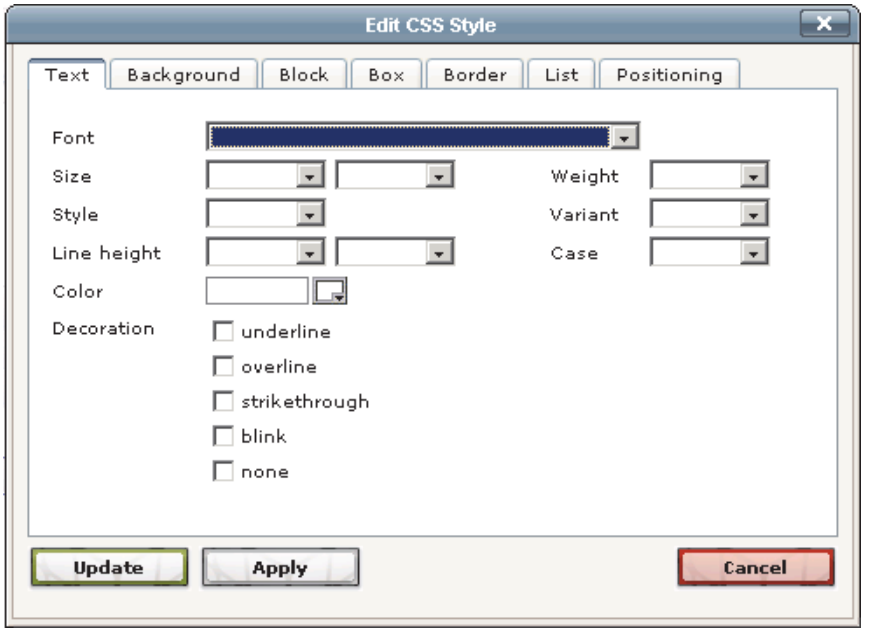
If a text attribute can accept HTML formatting (an option set by the administrator for each attribute), this toolbar appears when you click in the attribute's field. It includes the following controls grouped into two rows:

- **First Row of Controls:**
  - Select the font family and size.
  - Apply bold, italic, and underline formatting.
  - Align the text.
  - Apply list and indentation formatting.

- **Insert custom character:** Click this button to insert a special character into the attribute text. The Select custom character dialog opens. Click the desired character.

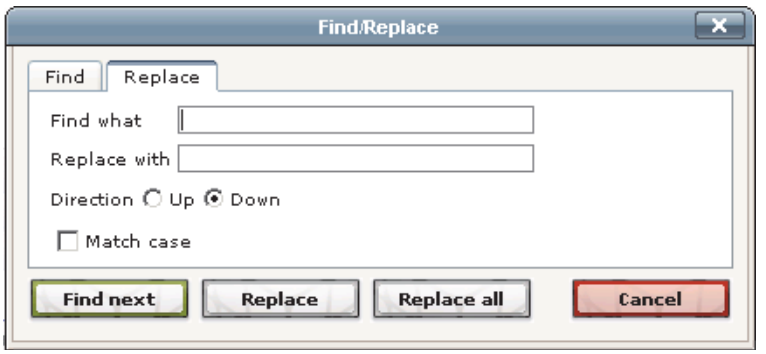


- **Edit CSS Style:** Click this button to edit the in-line CSS style of the currently selected element. The Edit CSS Style dialog appears. Edit the CSS styling elements as desired, then click **Apply** to apply the changes and keep the dialog open, or click **Update** to apply the changes and close the dialog.

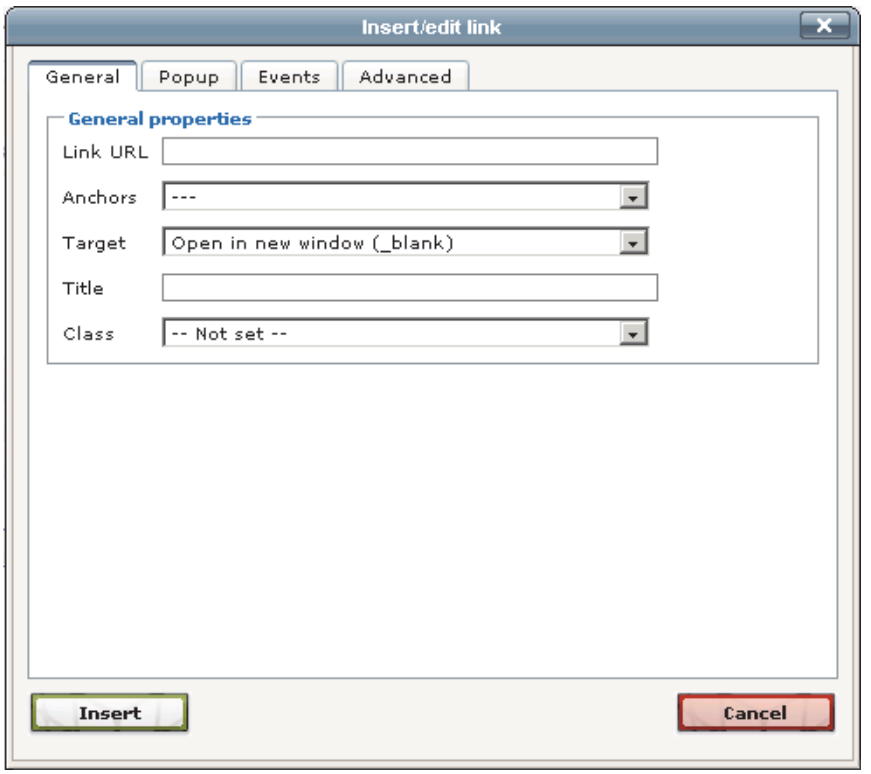


- **Second Row of Controls:**
  - Print the current attribute.

- **Find** and **Find/Replace:** To replace and/or find a text string, click the appropriate button. The Find/Replace dialog appears. Complete the fields as needed.

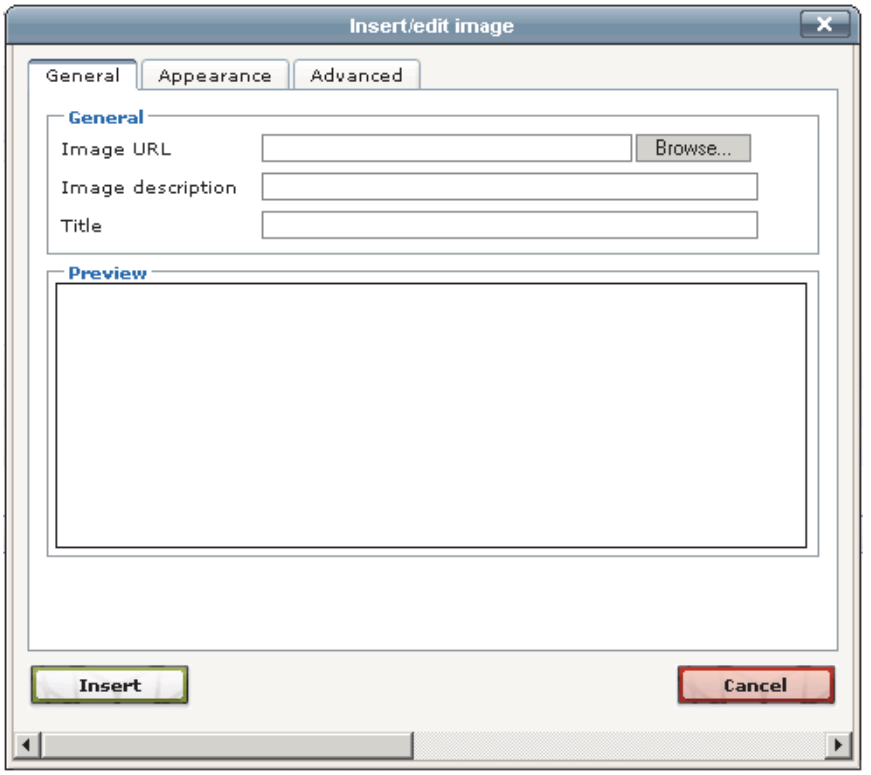


- Select the text color and background color.
- **Insert/edit link** and **Unlink**: To remove an existing link, select the link and click the **Unlink** button. To create a link or edit an existing link, select the text and click the **Insert/edit link** button. The Insert/edit link dialog appears. Complete the fields as needed, and click the **Update** or **Insert** button.

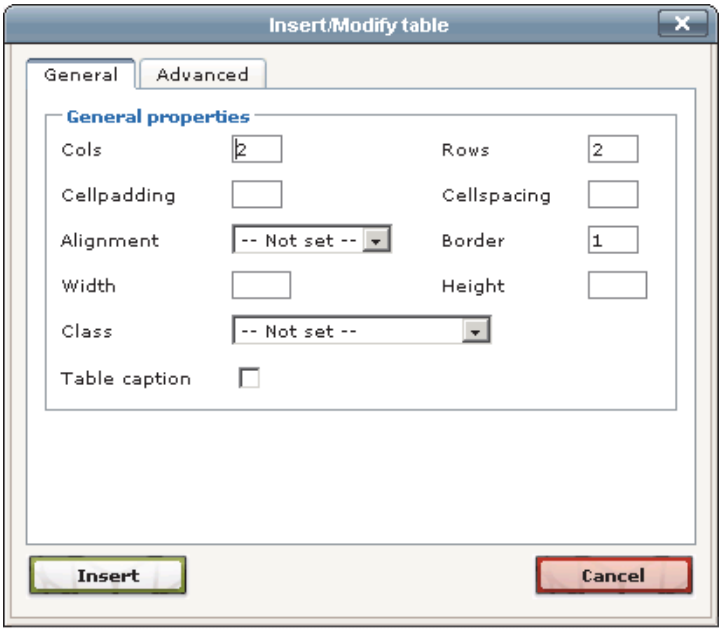


- **Insert/edit image:** To insert a graphic into the attribute, place the cursor where you want to insert the image. To edit the HTML parameters of an existing image, select the image element. Then click the **Insert/edit image** button. The

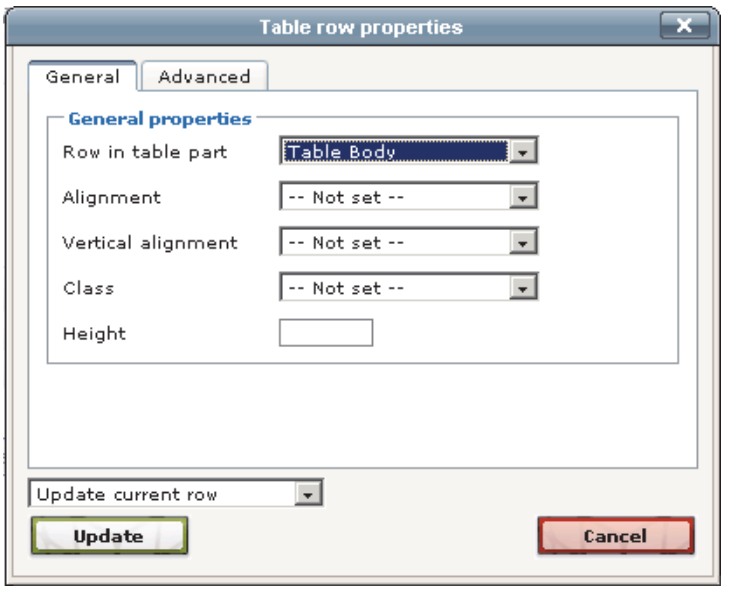
Insert/edit image dialog opens. Complete the fields as needed and click the **Update** or **Insert** button.



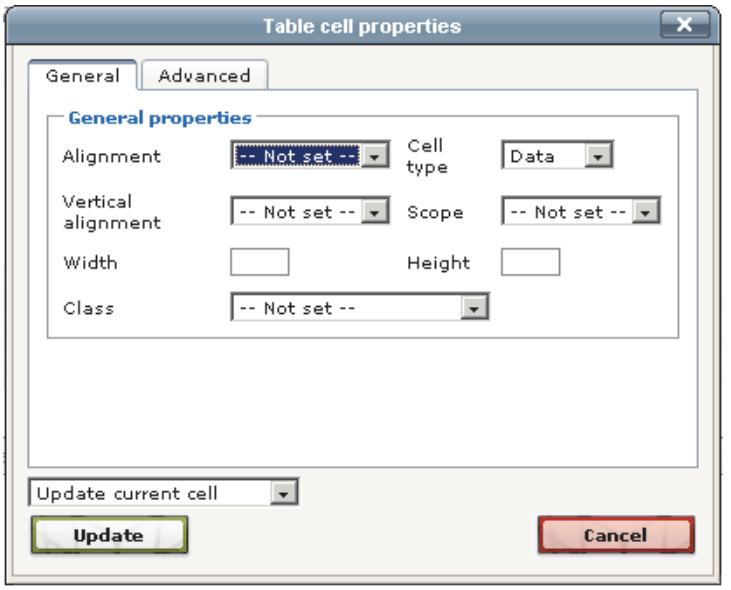
- **Insert/Modify Table:** To insert a table into the attribute, place the cursor where you want to insert the table. To edit the HTML parameters of an existing table, select the table. Then click the **Insert/Modify Table** button. The Insert/Modify Table dialog opens. Complete the fields as needed and click the **Update** or **Insert** button.



- **Table row properties:** To edit the HTML properties of a row in a table, select the area and click the **Table row properties** button. The Table row properties dialog opens. Complete the fields as needed and click the **Update** button.

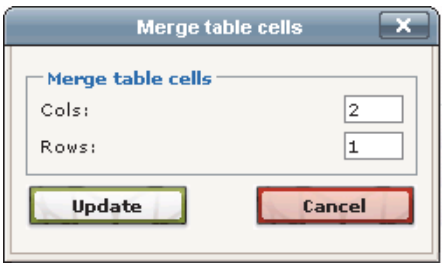


- **Table cell properties:** To edit the HTML properties of a cell in a table, select the area and click the **Table cell properties** button. The Table cell properties dialog opens. Complete the fields as needed and click the **Update** button.

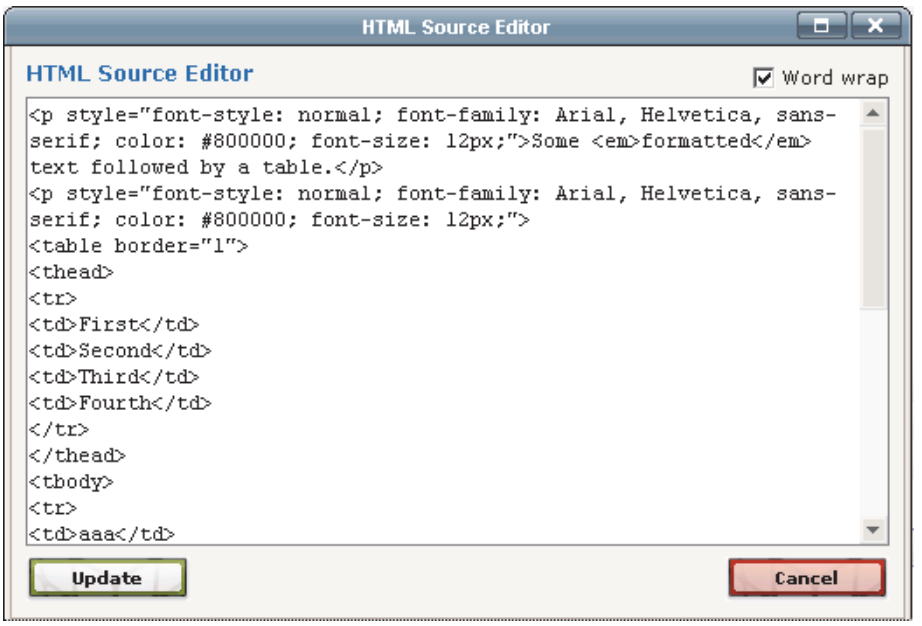


- **Insert row before** and **Insert row after** and **Delete row:** Place the cursor at the desired location in a table and click the appropriate button.
- **Insert column before** and **Insert column after** and **Remove column:** Place the cursor at the desired location in a table and click the appropriate button.
- **Merge table cells:** To merge cells, place the cursor in the upper left cell of the cells that you wish to merge, and click the **Merge table cells** button. The Merge table cells dialog opens. In the **Cols** field, specify the number of column cells to merge. In the **Rows** field, specify the number of row cells to merge. For example, a single unmerged cell would have a value of 1 in both fields. Click the

Update button apply the merge settings. The contents of the existing cells are combined into the merged cell.



- **Split merged table cells:** To split a merged cell back into individual cells, place the cursor in the merged cell and click this button. The contents of the merged cell is retained in the upper left cell of the group.
- **Edit HTML Source:** To directly edit the HTML source tags, click this button. The HTML Source Editor dialog opens. Edit the HTML as needed, and click the **Update** button.



- **Toggle fullscreen mode:** Click to toggle between a dialog view and a full screen view of the text attribute you are editing.

Attribute Constraints Tab

This tab uses relationship criteria to determine which requirements are included.

To complete the Attribute Constraints tab:

1 Click the **Attribute Constraints** tab.

2 If you want to change the category or categories that are searched, select them in the **Category** list. Note that the **Category** list is not present on the **Attribute**

Constraints tab for the **New Traceability Report** dialog box. It is on the **Relationship Constraints** tab instead.

NOTE To select all categories between two categories, select the top category, press Shift, click the selected category, and then click the last category. To select more than one category, press CTRL and click the categories. To deselect a category, press CTRL and click the selected category. Because the CTRL key toggles the selection of the clicked category without changing the selection of any other categories, if you click a category without pressing CTRL, all other selections are removed.

To search for a category, type one or more letters from the category name in the **Find** box.

If no categories are selected, **Choose categories** is displayed in the list box, and all categories are included in the query.

If more than one category is selected, **(*n* selected)** is displayed in the list box. If only one category is selected, ***Category Name*** is displayed in the list box.

3 For each attribute in the **Choose attribute constraints** sections, specify a value.

Note the following:

- If you leave a field blank, any value for that attribute is retrieved in the query.
- If you select multiple values for attributes that are displayed in a list, any of the selected values are matched.
- You can use wildcards in the attributes constraints sections to query for a keyword. For example, if you want to find the requirements that have the word "system" in the title, type ***system*** in the **Title** field in the **Standard Attributes** section.

4 Select the **Case sensitive search** check box if you want the search results to exactly match the capitalization of the attribute values.

Attribute Constraints Tab Controls

This section describes the controls associated with attributes on the **Attributes Constraints** tab.

Operators

If you hover over the down arrow ▾ to the left of the attribute label, a list of operators opens. The list includes only the operators that are appropriate for the attribute type. The following table describes each operator.

Operator	Description
=	The attribute equals the value you specify. The * and % wildcards are supported.
not =	The attribute does not equal the value you specify. The * and % wildcards are supported.
<	The attribute is less than the value you specify.
>	The attribute is greater than the value you specify.
<=	The attribute is less than or equal to the value you specify.

Operator	Description
>=	The attribute is greater than or equal to the value you specify.
between	The attribute is between the two values you specify. When you select the "between" operator, another field appears that allows you to type the second value.
not between	The attribute is not between the two values you specify. When you select the "not between" operator, another field appears that allows you to type the second value.
null	The attribute has not been set (not initialized).
not null	The value has been set (initialized).
in	The attribute equals one of the values you specify.
not in	The attribute does not equal one of the values you specify.

Runtime Choice

If you hover over the down arrow ▾ to the right of the attribute label, a list opens that lets you choose whether the attribute value is to be entered at runtime (that is, at script execution time) or stored as part of the query. The following table describes the choices in the list.

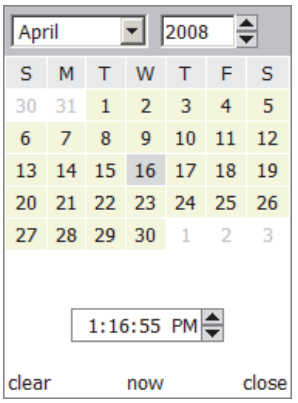
Choice	Description
Enter now	The attribute value is stored as part of the query.
Enter at runtime	The user is prompted to enter the attribute value when the query runs.

Date and Time Control

The date and time shown in the date and time control matches the date format specified in the attribute definition.

To use the date and time control:

1 Click the calendar icon . The date and time control opens.



2 Do one of the following:

- Select a month, year, day, and time, and then click **close**.

NOTE To change a unit of time (that is, an hour, minute, or second), select the unit of time, and then click the up or down arrow button.

- Click **now** to specify the current date and time.

The date attribute field is populated with the date and time you specified.

3 To clear the date attribute field, click the calendar icon, and click **clear**.

Relationship Constraints Tab

This tab uses relationship criteria to determine which requirements are included.

NOTE The constraints you select on the **Relationship Constraints** tab are combined using an AND operation. That is, the requirement must meet all the constraints that are specified before it is included in the report.

To complete the Relationship Constraints tab:

1 Click the **Relationship Constraints** tab.

Collection restraints describe collection memberships to use when retrieving requirements. Select collections from the **Collections** list, and select from the constraint options to specify whether they should be included in the query. To select multiple collections in the list, hold down the Control key while you select the collections. To select a range of collections, select the first collection, press the Shift key, and then select the last collection. You can find collections by scrolling in the list, or by typing a substring of the collection name in the **Find collection** box.

The constraint options include:

- **In any selected collection(s)** to include requirements in any of the collections you have selected
- **Not in any selected collection(s)** to exclude requirements from any of the collections you selected
- **In all selected collection(s)** to include requirements that are in each of the collections you selected
- **Not in all selected collection(s)** to exclude requirements that are not in each of the collections you selected
- **In any collection(s)** to include requirements in any - even just one - of the collections you selected
- **Not in any collection(s)** to exclude requirements that are in any - even just one - of the collections you selected

2 Baseline constraints describe baselined collection memberships to use when retrieving requirements. Select baselines from the **Baselines** list, and select **In** or **Not In** to specify whether they should be included in the query. You can include more than one baseline constraint in the query. You can find baselines by scrolling in the list, or by typing a substring of the baseline name in the **Find baseline** box.

To select multiple baselines in the list, hold down the Control key while you select the baselines. To select a range of baselines, select the first baseline, press the Shift key, and then select the last baseline.

The constraint options include:

- **In any selected baseline(s)** to include requirements in any of the baselines you have selected
- **Not in any selected baseline(s)** to exclude requirements from any of the baselines you selected
- **In any baseline(s)** to include requirements in any - even just one - of the baselines you selected
- **Not in any baseline(s)** to exclude requirements that are in any - even just one - of the baselines you selected

3 Document constraints describe documents to use when retrieving requirements. Select documents from the **Documents** list, and select **In** or **Not In** to specify whether they should be included in the query.

You can find documents by scrolling in the list, or by typing a substring of the document name in the **Find document** box.

To select multiple documents in the list, hold down the Control key while you select the documents. To select a range of documents, select the first document, press the Shift key, and then select the last document.

The constraint options include:

- **In any selected document(s)** to include requirements in any of the documents you have selected
- **Not in any selected document(s)** to exclude requirements from any of the documents you selected
- **In any document(s)** to include requirements in any - even just one - of the documents you selected
- **Not in any document(s)** to exclude requirements that are in any - even just one - of the documents you selected

4 *Query by Class dialog box only:* A snapshot is a version of a document at a specific point in time. Snapshot constraints describe snapshots to use when retrieving requirements. Select snapshots from the **Snapshots** list, and select **In** or **Not In** to specify whether they should be included in the query. You can include more than one snapshot constraint in the query. You can find snapshots by scrolling in the list, or by typing a substring of the snapshot name in the **Find snapshot** box.

To select multiple snapshots in the list, hold down the Control key while you select the snapshots. To select a range of snapshots, select the first snapshot, press the Shift key, and then select the last snapshot.

The constraint options include:

- **In any selected snapshot(s)** to include requirements in any of the snapshots you have selected
- **Not in any selected snapshot(s)** to exclude requirements from any of the snapshots you selected

- **In any snapshot(s)** to include requirements in any - even just one - of the snapshots you selected
- **Not in any snapshot(s)** to exclude requirements that are in any - even just one - of the snapshots you selected

5 Relationships connect a primary and a secondary class. Select relationships from the **Relationships** list, and select **In** or **Not In** to specify whether they should be included in the query. You can include only one relationship constraint in a query.

You can find relationships by scrolling in the list, or by typing a substring of the relationship name in the **Find relationship** box.

NOTE

- **<Source>** and **<Immediate>** are special relationships that are used to locate versions of requirements. The **<Source>** relationship refers to the original requirement in a chain of versions. The **<Immediate>** relationship refers to the immediate predecessor or successor of a requirement.
- Relationship constraints are not present on the **Relationship Constraints** tab on the **New Traceability Report** dialog box.
- If you select a relationship, and then type the first few letters of another relationship, the first relationship is no longer selected.

6 *New Traceability Report dialog box only:* Category constraints describe categories to use when retrieving requirements. You can choose whether the user is to enter the category or categories at runtime (that is, at script execution time) or whether the category or categories are stored as part of the query. The category and runtime choices apply to all the classes in the traceability report.

Perform one of the following steps:

- Click the down arrow to the right of the **Categories** list, and select **Enter now**. Select one or more categories from the **Categories** list, click the down arrow to the left of the **Categories** list, and select **in** or **not in** to specify whether the categories should be included in the query.
- Click the down arrow to the right of the **Categories** list, and select **Enter at runtime**. Click the down arrow to the left of the **Categories** list, and select **in** or **not in** to specify whether the category or categories should be included in the query.

NOTE The **null** and **not null** options are not used for categories.

TIP

- In addition to holding down CONTROL and clicking categories to multiselect and holding down SHIFT and clicking a category to select a category and its subcategories, holding down CONTROL+SHIFT and then clicking a selection toggles the selection of that category and its subcategories.
- To return the category list to an empty selection, hold down CONTROL and then click each selected category until no categories are selected and **Choose Categories** is again displayed in the categories list. Alternatively, you can click any category, hold down CONTROL, and click the category again.
- To search for a category, type one or more letters from the category name in the **Find** box.
- If more than one category is selected in the list, **(*n* selected)** is displayed in the list box. If only one category is selected in the list, ***Category Name*** is displayed in the list.

Display Options Tab

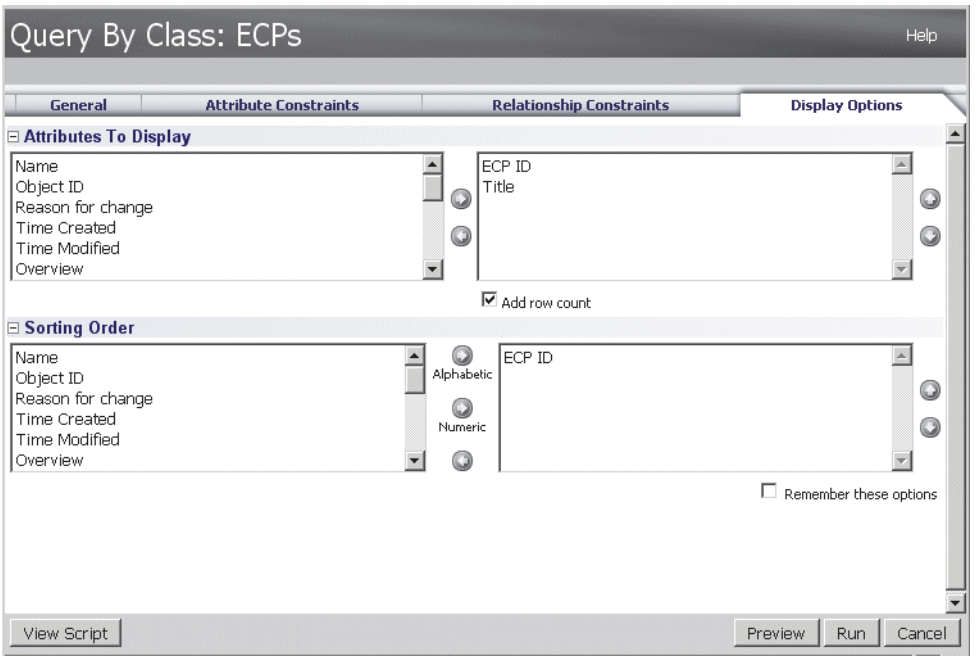
This tab determines what fields are displayed and in what order. Slightly different versions of this tab appear in a number of dialogs.

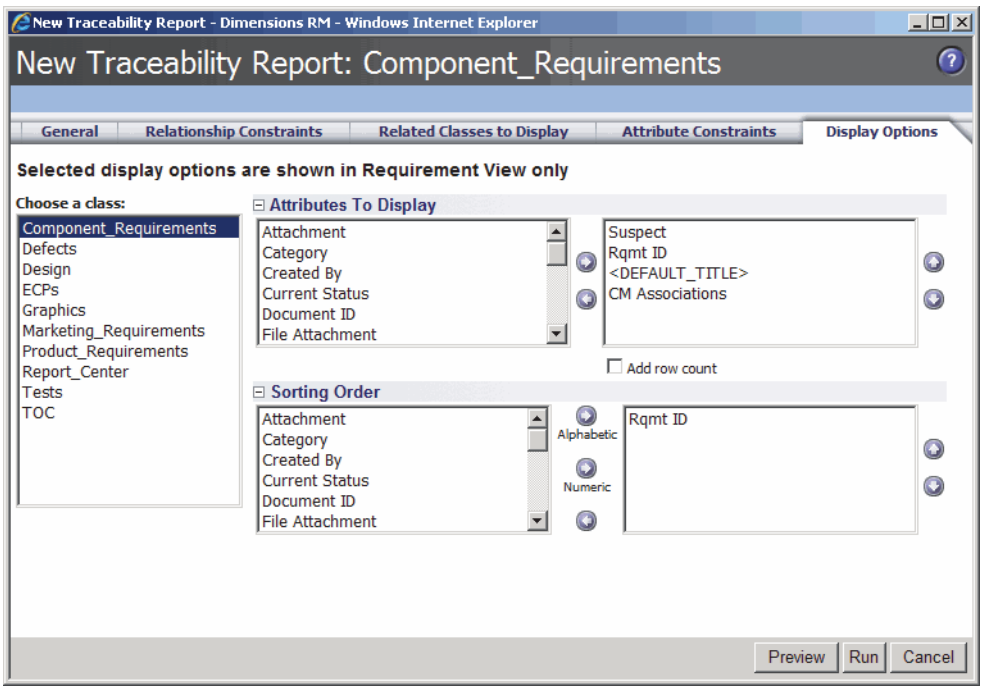
NOTE

- The attributes you select to display in the **Display Options** tab in the **New Traceability Report** dialog box are only shown in Requirements View after you run a traceability report.
- There are two meta attributes that can be displayed in a traceability report or Query by Class or Query by Relationship:
  - **<DEFAULT_TITLE>** is in a column named **Title**. It gets the data for the attribute marked as the Title attribute in Class Definition. For more information about the Title attribute, see the *Serena Dimensions RM Administrator's Guide*.
  - **CM Associations** is in a column named **CM Associations**. In the traceability report or query, if a requirement is in a collection that is linked to a Dimensions CM project, that collection name is displayed in the column.

To complete the Display Options tab:

1 Click the **Display Options** tab.





NOTE The tabs shown in the preceding illustrations are from the **Query by Class** and **New Traceability Report** dialog boxes. The appearance of **Display Options** tabs can differ.

2 *New Traceability Report only:* Select a class from the **Choose a class** list. All classes are displayed on this tab, but the only attributes that are saved are those that are in classes that are displayed in the traceability report. You can sort attributes for each class.

3 To specify the columns to display and their order:

a Select the attribute or attributes in the **Attributes to Display** list.

b Click the right arrow button. The attribute or attributes are moved to the display list on the right. If you change your mind, select the attribute or attributes and click the left arrow button to move them back to the **Attributes to Display** list. (Alternatively, you can double-click an attribute to add it to the display list on the right.)

c Use the up and down arrow buttons to the right of the display list to change the display order of the columns.

4 *Query by Class, Query by Relationship, and New Traceability Report only:* Select the **Add row count** check box to display the number of rows at the bottom of the query results.

5 To specify the sort type and order:

a Select one or more attributes in the **Sorting Order** list.

b Click one of the following buttons:

- Alphabetic button 

for a simple alphabetic sort.
- Numeric button 

for a numeric sort. This type of sort can be used for alphanumeric attributes such as paragraph numbers in outlines. For example, with a numeric sort, the numbers (10, 20, 1, and 2) are sorted as (1, 2, 10, 20) instead of (1, 10, 2, 20).

NOTE Alternatively, you can double-click an attribute to add it as an alphabetic sort to the sort list on the right.

c Use the up and down arrow buttons to the right of the sort list to specify how you want data sorted.

For example, select **Paragraph ID** if you want the query results to be sorted in the order presented in the original document, and click the **Numeric** button to sort by paragraph number. Then select **Priority** and click the **Alphabetic** button if you want the requirements with the same paragraph ID sorted by the priority assigned to them.

NOTE If you choose an attribute with the *Date* data type, the results are sorted in date order regardless of whether you chose **Alphabetic** or **Numeric**.

6 Select the **Remember these options** check box to remember the settings on this tab the next time this dialog box is invoked. The settings are remembered if the same user invokes the dialog box from the same project and queries the same class or relationship. They are remembered in the **Query Class**, **Query Relationship**, **Link**, **Organize by Collections, and Add to Chapter** dialog boxes.

NOTE All of the dialog boxes cited above share the settings. For example, if you save the settings for the Marketing Requirements class in the **Query Class** dialog box, you will see the same settings for the Marketing Requirements class in the **Link** dialog box.

What Can RM Browser Do?

RM Browser provides Web access to Serena® Dimensions® RM functions. In RM Browser, you can do the following:

- View query results generated in real time from existing filters and scripts
- Create new queries and optionally save them as filters or scripts
- Edit queries
- Print or save query results
- Print individual requirements
- Create, update, replace, delete, and remove requirements
- View file attachments and add file attachments to requirements
- Create new discussion threads and participate in existing ones
- Submit change requests and group them into Engineering Change Proposal (ECP) requirements
- Approve or reject change requests
- Create and traverse links between requirements
- Create and modify polls about specific requirements, vote in polls, and view current poll results
- Add requirements to or remove requirements from collections; and create, delete, and rename collections
- Associate collections to Dimensions CM projects, and associate Dimensions RM requirements to Serena® Dimensions® CM requests
- Create baselines from collections
- Organize requirements and scripts within categories. Categories are used to restrict the visibility of parts of the project based on user groups.
- View, create, and modify requirements and chapters in a hierarchical document-like structure, and optionally export those document-like structures as Microsoft® Word documents
- Create and edit traceability reports in which you can analyze linkages between requirements, edit requirements, and print traceability reports
- View and clear links that are considered "suspect"
- View the history of a requirement
- Merge changes to documents, chapters, and requirements that were made by users making changes at the same time
- Unlock chapters and requirements that were locked by another user so that you can edit them

Logging In

The login process that you experience will depend upon which login source has been implemented by your administrator:

- RM or LDAP
- Single Sign On (SSO)
- Single Sign On with SmartCard (CAC)

NOTE

- Cookies must be enabled to log in to RM Browser.
- After a period of inactivity, an RM Browser session times out, and you are logged out of RM Browser. A new Welcome page opens so you can log in again. By default, the session timeout is 30 minutes. Your administrator can modify this value. It is recommended that you log out of RM Browser when you finish your work in it.

RM or LDAP Login

To log in to RM Browser:

1. Navigate to the URL provided by your project administrator. The User Log in page opens.
2. Enter your user name and password.
3. Select the database in which you will be working. The first time you log in, the full list of databases is included in the list of databases. Afterward, the last database in which you worked is selected by default.
4. Select the project in which you will be working. Only the projects to which you have access are included in the list of projects. The last project in which you worked is selected by default.
5. Click the **Login** button or press the Enter key.

Single Sign On Login

To log in via SSO:

1. Navigate to the URL provided by your project administrator. The SSO sign in page opens.
2. Enter your user name and password.
3. Click the **Log In** button. The User Log in page opens with the **Username** field populated and read-only.
4. Select the database in which you will be working. The first time you log in, the full list of databases is included in the list of databases. Afterward, the last database in which you worked is selected by default.

5 Select the project in which you will be working. Only the projects to which you have access are included in the list of projects. The last project in which you worked is selected by default.

6 Click the **Continue** button or press the Enter key.

Single Sign On with SmartCard Login

To log in via SmartCard:

1 Navigate to the URL provided by your project administrator. The SSO sign in page opens.

2 Ensure that your SmartCard is inserted into a reader, and click the **SmartCard Login** button.

3 Select a valid certificate from your SmartCard (CAC) and enter the appropriate PIN.

4 Click the **OK** button. The User Log in page opens with the **Username** field populated and read-only.

5 Select the database in which you will be working. The first time you log in, the full list of databases is included in the list of databases. Afterward, the last database in which you worked is selected by default.

6 Select the project in which you will be working. Only the projects to which you have access are included in the list of projects. The last project in which you worked is selected by default.

7 Click the **Continue** button or press the Enter key.

Switching to Another Project

To switch to another project, whether it is in the current database or a different database, you must log out and then log in to the desired database and project.

To switch to another project:

1 Click the **Log Out** link at the upper right of the RM Browser screen.

2 The **User Log In** page opens.

3 Complete the fields as needed for the login source you are using. See "Logging In" on page 36.

Changing Your Password

It is best security practice for users to change their passwords from time to time. The RM administrator can enforce this practice by setting the number of days a password lasts before it expires. Additionally, the RM administrator can enforce password quality requirements, such as the minimum length; minimum number of characters that must be different between the new and the old password; the minimum number of letters,

numerals, and special characters; and the number of old passwords that are stored to ensure that a password is not reused too soon. Using the procedure below, you can view the password rules that are in effect for the RM database.

NOTE The RM password rules do not affect logins via LDAP, as these would be managed in LDAP.

Before your current password is due to expire, you receive a warning dialog box that gives you the opportunity to change your password.

To change your password:

1. Click the **Welcome, *UserID*** link in the upper right of the screen. The Change Password dialog box appears.
2. To view the password rules in effect for this RM database, click the **Password Rules** link.

NOTE

- The rules apply to all projects in the database.
- The RM administrator can exempt individual users from the rules. However, exempt users will still see the rules if they click the Password Rules link.

3. Type your existing password in the **Old Password** field.
4. Type the new password in the **New Password** field.
5. Type the new password again in the **Confirm Password** field.
6. Click **OK**.

Logging Out

To log out of RM Browser:

- Click the **Log Out** link in the upper right of RM Browser.

NOTE It is recommended that you log out of RM Browser when you finish working in it.

Getting Help

You can get help specific to the page or dialog box you are currently using, or use the TOC and Search features of the full help system to look up information.

To get help for the page or dialog box you are on:

1. Click the **Help** link at the top right of the page or dialog box. A Help topic specific to the RM Browser page or dialog box opens.

2 Optionally, to display the TOC, Search, and other navigation features of the help system, click the **Show** link at the top of the help topic

Viewing Version, System, and Contact Information

To view version and system information:

1 Click the **About** link in the upper right of RM Browser. The **About Dimensions RM** dialog box opens.

The following information is displayed:

- **Version:** The version of Dimensions RM you are using.
- **Web Server:** The type of Web server that is hosting RM. For example, Apache/2.2.22(Win32).
- **Web Server OS:** The operating system in use on the Web server.
- **Database:** The Oracle version in use.
- **Browser Name:** The name of browser software you are using.
- **Browser Agent:** Version specific information about the browser software you are using and its features.
- **Attributions:** Third-party tools utilized by RM Browser.

2 **E-mail config info to Serena:** Click this button if you are working with Serena Customer Support on an issue and have been asked to send the configuration information.

3 For links to Serena's home page, Serena contact information, and other useful links, see the **Contact Information** tab.

Demonstration Projects

Two demonstration projects are included with Dimensions RM. If your administrator has installed them, you may find them to be a convenient way to get acquainted with the features of Dimensions RM.

The QLARIUS_RM Project

The QLARIUS_RM demonstration project lets business analysts and product managers quickly understand how the key functionality of Dimensions RM is beneficial in their own requirement lifecycles. QLARIUS_RM demonstrates how requirements are categorized and stored, and how the requirements lifecycle is automated and enforced. QLARIUS_RM provides predefined requirement classes, links between classes, and built-in reporting.

The default users and passwords for the QLARIUS_RM project are listed in the following table.

QLARIUS_RM	
User Name	**Password**
DMSYS	rtm
MARK	mark
PETA	peta
QLARIUSADMIN	rtm
QUIN	quin
SALLY	sally
TED	ted

The RMDEMO Project

RMDEMO is another demonstration project that provides a rich set of Dimensions RM features and functionality.

The default users and passwords for the RMDEMO project are listed in the following table.

RMDEMO	
User Name	**Password**
ADMINISTRATION	rtm
DEVELOPMENT	rtm
ENGINEERING	rtm
EPHOTO	rtm
EPHOTO_INFO	rtm
JOE	joe
MANAGEMENT	rtm
MARKETING	rtm
RMDEMOADMIN	rtm
RTMADMIN	rtm
SALES	rtm
SUPPORT	rtm
TECH_PUBS	rtm
TEST	rtm
TRAINING	rtm

Limitations of the RM Browser Interface

RM Browser provides a powerful and flexible interface for working in Dimensions RM, including many convenient features not available in previous interfaces. However, RM Browser also lacks some features that where available in previous interfaces.

If you must on occasion utilize a feature that is not available in RM Browser, use an old interface for that purpose. However, we recommend that you use RM Browser for normal day-to-day operations.

The following sections list *some* of the features not available in RM Browser. The features below may, *or may not*, be added at some point in the future as priorities dictate.

Expanding Objects

RM Browser does not implement this feature. However, RM Browser does correctly display expand events in an object's history.

Focusing Objects

RM Browser does not implement this feature. However, RM Browser does correctly display focus events in an object's history.

Chapter 2

Configuring User Settings

User Settings Versus Project Settings

By default, RM Browser uses the project settings that are in effect for a given project. If the RM administrator changes the project settings, this affects all users who have not specified their own settings. Each user can override the project settings by specifying their own. See the following sections.

NOTE For information on project settings, see "Configuring Project Settings" on page 152.

Configuring User Settings

The following sections describe how to specify user specific settings.

NOTE Some settings are grayed out and cannot be edited in the User Settings dialog. These settings can be set at the project level (thus affecting all users). See "Configuring Project Settings" on page 152.

Automatically Refreshing Containers based on Queries

You can choose whether all containers and collections based on queries and scripts should be refreshed by default when they are opened. This may affect performance. If collections based on queries significantly slow performance, you can manually refresh their content as needed as well. See "Refreshing the Contents of a Container" on page 132.

To automatically refresh containers based on queries:

1. Click the **Settings** link at the top of the screen. The User Settings dialog appears.
2. In the Containers section, select the **Automatic Refresh** checkbox.
3. Click the **OK** button.

Configuring the Quick Search Display

By default, project display properties determine the columns that are displayed in the quick search results for a specific class. You can personalize your quick search results, overriding the project settings.

NOTE The project defaults are set by the administrator. See "Configuring Quick Search Display" on page 155.

To change the columns displayed in quick search results:

1. Click the **Settings** link in the upper right of RM Browser. The User Settings dialog box appears.
2. Select **Quick Search**.

3 Select a class in the **Choose a class** list. The **Attributes To Display** and **Sorting Order** sections are displayed.

4 **Use project settings:** Deselect this checkbox to override the display and order settings set by your administrator at the project level for the selected class.

NOTE This first **Use project settings** checkbox appears in the upper portion of the dialog just below the Sorting Order controls. It applies only to the display and order settings of the selected class. You cannot edit these settings until you disable this checkbox.

5 To specify the columns to display, and their order:

a Select the attribute on the left in the **Attribute to Display** list.

b Click the right arrow button. The attribute is moved to the display list on the right. If you change your mind, select the attribute and click the left arrow button to move it back to the **Attributes to Display** list. (Alternatively, you can double-click an attribute to add it to the display list on the right.)

c Use the up and down arrow buttons to the right of the display list to change the display order of the columns.

6 To specify the sort order and type:

a Select sorting criteria in the **Sorting Order** list, such as *Category* or an attribute.

b Click one of the following buttons:

- **Alphabetic** 

for a simple alphabetic sort.
- **Numeric** 

for a numeric sort. This type of sort can be used for alphanumeric attributes such as paragraph numbers.

NOTE Alternatively, you can double-click an attribute to add it as an alphabetic sort to the sort list on the right.

c Use the up and down arrow buttons to the right of the sort list to specify how you want data sorted.

NOTE If you choose an attribute with the *Date* data type, the results are sorted in date order regardless of whether you chose **Alphabetic** or **Numeric**.

For example, select **Paragraph ID** if you want the query results to be sorted in the order presented in the original document, and click the **Numeric decimal** button to sort by paragraph number. Then select **Priority** and click the **Alphabetic** button if you want the requirements with the same paragraph ID sorted by the priority assigned to them.

7 Select another class, if necessary, and repeat the preceding steps.

NOTE You do not have to click **Apply** before you select another class. The changes you make are remembered as long as the dialog box is open.

8 **Automatically run default query:** Select this checkbox to run the most recently used search criteria when you open the page. If this feature is not enabled, the Quick Search fields will be populated with the criteria of the most recent search, but no results will be displayed until you click the Search button.

9 **Use Project settings:** Select this checkbox to override your local pagination settings with those set by your administrator at the project level.

NOTE This second **Use Project settings** checkbox appears in the lower portion of the dialog and applies only to the pagination settings. You cannot edit these settings until you disable this checkbox.

10 **Activate Pagination:** Select this checkbox to break the results up into multiple pages if they exceed a certain quantity. Specify that quantity in the **Number Of Records Display Per Page** field.

11 By default, only current requirement versions are shown in the results even if a baseline or snapshot is selected. To see the actual versions used in a baseline or snapshot, select the **Automatically activate query across all requirement versions if baseline or snapshot is selected** checkbox.

12 Click the **OK** button.

Specifying Whether to Display Title Numbering in Documents

In Documents View in RM Browser, requirements and chapters are numbered. By default, when you publish a Microsoft® Word document from Documents View, the Word document includes the numbers you see in the document in Documents View.

To prevent the numbers from appearing in the Word document:

1 Click the **Settings** link at the top of the screen. The User Settings dialog appears.

2 Select **Documents** in the left pane of the User Settings dialog.

3 **Use Project settings:** Deselect this checkbox in order to use your own numbering settings rather than those in the project settings.

4 **Publish Chapter Title numbering:** Clear this check box if you want to create your own styles in Word for chapters that include automatic numbering. In this case, the automatic numbering may not match the numbers that you see in the document in Document View.

5 **Publish Requirement Title numbering:** Clear this check box if you want to create your own styles in Word for requirements that include automatic numbering. In this case, the automatic numbering may not match the numbers that you see in the document in Document View.

6 Click **OK**.

Setting Autoloading of Documents

You set the default for autoloading of documents, that is, the document that was last opened in the previous RM Browser session is opened in the next session.

To set autoloading of documents:

1 Click the **Settings** link at the top of the screen. The User Settings dialog appears.

2 Select **Documents** in the left pane.

3 Select or clear the **Auto load document** check box.

4 Click **Apply**, and then click **OK**. You must restart RM Browser for the setting to take effect.

Customizing My Work Page

You can specify up to seven expandable sections to appear on your My Work page. Each section displays the results of a query.

NOTE You must have "read" access to run the default scripts and filters that are provided on your My Work page. You must be granted "read" access to all scripts to access the default scripts and filters, because it is not possible to grant access to these scripts and filters specifically. You must also be in a group that has access to the categories where the scripts exist.

The following prebuilt sections are available.

NOTE The **Recent Comments**, **Recently Changed Requirements**, and **Recent Polls** sections are displayed by default.

- **Pending Change Requests—**Shows pending change requests for requirements that were created or updated by any user, and shows pending change requests that were submitted as requests for new requirements. You can open the change requests directly from this section.
- **Recent Comments**—Shows comments that were added to requirements that were created or updated by any user within the specified timeframe.
- **Recently Changed Requirements**—Shows requirements that have been modified or created by any user within the specified timeframe.
- **Recent Polls**—Shows polls that meet the specified conditions within the specified timeframe.

You can also create custom sections based on the scripts of your choice.

To customize the My Work page:

1 From the My Work page, click **Customize** in the **Actions** menu. The Customize dialog box opens.

2 Select the check box next to each predefined query that you want to include. Clear the check box next to each predefined query that you do not want to include.

3 Select a timeframe for each predefined query that you want to include. The default timeframe for these queries is **in the last 14 days**.

4 Select the category or categories from which requirements should be included in the query results.

In the **Categories** lists in the predefined queries, click a category to select it. To select all categories that belong to a parent category, select the parent category, press Shift and then click the parent category. To select more than one category, press CTRL and click each category. To deselect a category, press CTRL and click

the selected category. If you click a category without pressing CTRL, all other selections are removed.

To search for a category, type one or more letters from the category name in the **Find** box.

If no categories are selected, **Choose categories** is displayed in the list box, and all categories are included in the query.

If you select more than one category, **(*n* selected)** is displayed in the list box. If you select only one category, ***Category Name*** is displayed in the list box.

5 For the **Recent Polls** predefined query, select whether the poll state should be active polls, closed polls, or any poll; whether the participants should be you or anyone; and whether the poll was started by you or anyone.

6 For each custom section you want to include, do the following:

a Type the section title that you want to appear on your My Work page.

b Select the category from which you want to select scripts. The number of scripts that exist in each category is displayed in parentheses after the category name in the **Category** list.

c Select the script you want to associate with the section.

7 For each custom section that you want to remove, select **Choose script** or **Choose category, then script**.

8 Click **Save**.

Chapter 3

Working with Requirements

The Difference Between Updating, Replacing, and Deleting Requirements

Dimensions RM allows you to modify requirements in several fundamentally different ways. It is critical to understand the difference between these options - update, replace, and delete:

- **Replace** creates a new version while maintaining a history of changes. This allows you to trace change to a requirement over time. This is the recommended method for changing requirements to ensure auditability.
- **Update** overwrites the content of the requirement version without maintaining a record of what was changed. This option is not recommended if you need to maintain a history, or audit trail, of changes to requirements over time. All other attributes, including Current Status, remain intact.
- **Delete** marks the requirement as deleted and makes it unavailable for modification. However, it remains in the database and can be undeleted later on. By default, deleted requirements are not visible; however, you can query for them.

Creating a New Requirement

You can create a new requirement if you have **Create** permission for the class to which the requirement belongs. If you do not have **Create** permission, but you do have **CreateCR** permission, you can submit a change request for the new requirement. See "Submitting a Change Request for a New Requirement" on page 52.

TIPS If you are using Firefox, you can enable the Firefox spell-check feature. Consult Firefox online help for more information.

To create a new requirement:

1 Select **Requirement** from the **New** menu. The New *ClassName* dialog opens.

2 **Class:** Select the class to which the new requirement will belong. This list includes all of the classes for which you have "create" or "submit" permission.

NOTE

- If a requirement was selected or open when you invoked the dialog, the dialog opens with a class already selected.
- If you invoked the New dialog by clicking the **Create New and Link** button in the **Links** section of the Edit Attributes dialog, you cannot change the class selection.

3 **Category:** Select the category to which the new requirement will belong.

4 **Attributes:** Complete the fields in the attributes sections, as needed. Attributes that are incomplete or incorrect are flagged with a red exclamation mark ( ). A green

check mark ( ) indicates that the value is acceptable. To view a tip as to what values are acceptable, hover over the attribute's exclamation mark or check mark.

NOTE

- **Group Attributes:** If this section appears, the requirement class has been defined to include one or more group attributes. See "Working with Group Attributes" on page 55.
- **Applying HTML Formatting:** If a text attribute can accept HTML formatting, a text formatting tool bar appears when you click in the attribute's field. See "HTML Text Formatting Toolbar" on page 21.

5 **File Attachments**: To attach a file to the requirement, expand this section and click **Attach**. The Add Attachment dialog opens. Enter the full path to the file or click **Browse** to locate the file, and then click the **OK** button.

6 **Container:** To add the new requirement to a collection, expand this section and click one of the following buttons:

- **Create New Container & Add** to create a new Collection and add the new requirement to it. The Add to Containers - New Collection dialog opens. See "Creating a New Collection" on page 134, but ignore the **Based on** section as that does not apply to this invocation of the dialog.
- **Add to Containers** to add the new requirement to an existing collection. The Add to Containers dialog opens. Select the desired collection or collections and click the **OK** button.

7 **Add as subrequirement**: (only appears if the New dialog was invoked from a document) If you invoked the dialog while a requirement was selected in a document, select this checkbox to add the new requirement as a subrequirement of the selected requirement; or deselect this checkbox to add the new requirement to the parent chapter of the selected requirement. If a requirement was not selected when you invoked the dialog, this checkbox does not appear, and the new requirement is added to whatever element was selected in the document tree.

8 **Close requirement after save:** Select this check-box to close the requirement after saving it. Otherwise, the requirement opens for editing after you save it.

9 Click one of the following buttons:

- **Save** to create the new requirement and close the New dialog. The requirement opens for editing if the **Close requirement after save** checkbox is not selected. See "Editing a Requirement" on page 53.
- **Save & Copy** to create the new requirement and retain the attribute values for creating another new requirement.

NOTE An attribute is copied into the next requirement only if the administrator selected the **Populate On Copy** option when defining the attribute. See the *Administrator's Guide*.

- **Save & New** to create the new requirement and clear the attribute values for creating another new requirement.

Submitting a Change Request for a New Requirement

Even if you do not have permission to create new requirements, but you do have permission to submit change requests (CreateCR), you can propose a change request for a new requirement. In doing so, you can specify the desired attributes for the new requirement.

To submit a change request for a new requirement:

1. Select **Propose New** from the Requirements group of the Actions pane. The Propose New Change Request dialog opens.
2. **Class:** Select the class to which the new requirement will belong. This list includes all of the classes for which you have "create" or "submit" permission.

NOTE If a requirement was selected or open when you invoked the dialog, the dialog opens with a class already selected.

3. **Category:** Select the category to which the new requirement will belong.
4. **Attributes:** Complete the fields in the attributes sections, as needed. Attributes that are incomplete or incorrect are flagged with a red exclamation mark ( ). A green check mark ( ) indicates that the value is acceptable. To view a tip as to what values are acceptable, hover over the attribute's exclamation mark or check mark.

NOTE

- **Group Attributes:** If this section appears, the requirement class has been defined to include one or more group attributes. See "Working with Group Attributes" on page 55.
- **Applying HTML Formatting:** If a text attribute can accept HTML formatting, a text formatting tool bar appears when you click in the attribute's field. See "HTML Text Formatting Toolbar" on page 21.

5. **File Attachments**: To attach a file to the requirement, expand this section and click **Attach**. The Add Attachment dialog opens. Enter the full path to the file or click **Browse** to locate the file, and then click the **OK** button.
6. **Reason for change:** Enter the reason you want to create a new requirement.
7. **ECP:** If you want to link the new requirement to an ECP class object, select the desired ECP from the list. If no ECPs have been defined, the list does not appear.

NOTE ECPs are a high-level change management class type (Engineering Change Proposal) that can be used to collect multiple change requests into a single package.

8. **Add change request to the document:** If you invoked the dialog from a Document work page, you have the option of adding the change request to that document.
9. Click one of the following buttons:
   - **Submit** to submit the change request and close the dialog.
   - **Submit & Next** to submit the change request and keep the dialog open for submitting another change request.

Editing a Requirement

This section describes using the Edit Attributes dialog to edit an existing requirement.

TIP Some attributes can be directly edited in the Editable Grid view. In this view, it is possible to edit an attribute across multiple requirements at once. See "Editable Grid, Grid, and Form Views" on page 17.

To edit a requirement:

1. After selecting the desired requirement in a work pane, select **Edit** from the Requirements group of the Actions pane. The Edit Attributes dialog opens.
2. **Attributes:** Complete the fields in the attributes sections, as needed. Attributes that are incomplete or incorrect are flagged with a red exclamation mark ( ). A green check mark ( ) indicates that the value is acceptable. To view a tip as to what values are acceptable, hover over the attribute's exclamation mark or check mark.

NOTE

- **Group Attributes:** If this section appears, the requirement class has been defined to include one or more group attributes. See "Working with Group Attributes" on page 55.
- **Applying HTML Formatting:** If a text attribute can accept HTML formatting, a text formatting tool bar appears when you click in the attribute's field. See "HTML Text Formatting Toolbar" on page 21.

3. **File Attachments**: To attach a file to, or remove a file from, the requirement, expand this section. See "Working with File Attachments" on page 57.
4. **Comments:** To view comments associated with the requirement or participate in or start a discussion, expand this section. See "Participating in Discussions" on page 72.
5. **Container:** To add/remove the requirement to/from a collection, expand the Container section and click the appropriate button:
   - **Add to Containers** to add the requirement to an existing collection. The Add to Containers dialog opens. Select the desired collection or collections and click the **OK** button. See "Creating a New Collection" on page 134, but ignore the **Based on** section as that does not apply to this invocation of the dialog.
   - **Remove from Containers** to remove the requirement from the selected container.

   To create, remove, or view links in the context of a specific container, expand the container's subsection. See "Working with Links" on page 58.

NOTE The version of any linked objects displayed here corresponds to the version of the object that is in the container. That may, or may not, be the current version of the object (see the Current Status column).

See the Links section if you want to see only links to the current version of an object.

6 **Links:** To add links to or remove links from the requirement, edit linked requirements, clear suspect links, and select which attributes to display in the section, expand this section. See "Working with Links" on page 58.

NOTE Any linked objects displayed here are the current version of the object. See the Container section for object links specific to the version in a container.

7 **Dimensions CM**: This section displays Dimensions CM projects and requests that are associated with this requirement.

8 **History:** This section displays information such as the date and time the requirement was modified, who modified it, and its status.

9 **Polls:** To create a poll associated with the requirement, modify an existing poll, vote in a poll, or view poll results, expand this section. See "Polling" on page 68.

10 **Show navigation bar / Hide navigation bar:** Click to show/hide the navigation bar at the bottom of the dialog. You can browse through the requirements in sequence with the **First**, **Previous**, **Next**, and **Last** controls.

11 Click one of the following buttons:

- **Copy** to close the dialog and copy the attribute values for use in creating a new requirement. The New *ClassName* dialog opens (see "Creating a New Requirement" on page 50).

NOTE An attribute is copied into the next requirement only if the administrator selected the **Populate On Copy** option when defining the attribute. See the *Administrator's Guide*.

- **Update** to close the dialog and save your changes without creating a new version of the requirement. (This option is not recommended if you need to maintain a history, or audit trail, of changes to requirements over time.)

  Update & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.

- **Replace** to close the dialog and save your changes as a new version of the requirement.

  Replace & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.

NOTE If the requirement is in an ECP-controlled document that you have not assigned an ECP to, and **Update to Current (Tip)** is in effect, the action will be halted and you will receive a message upon clicking the **Replace** or **Replace & Next** button. See "Assigning an ECP to a Document" on page 107.

Printing a Requirement

You can print a requirement from the **Edit Attributes** dialog box.

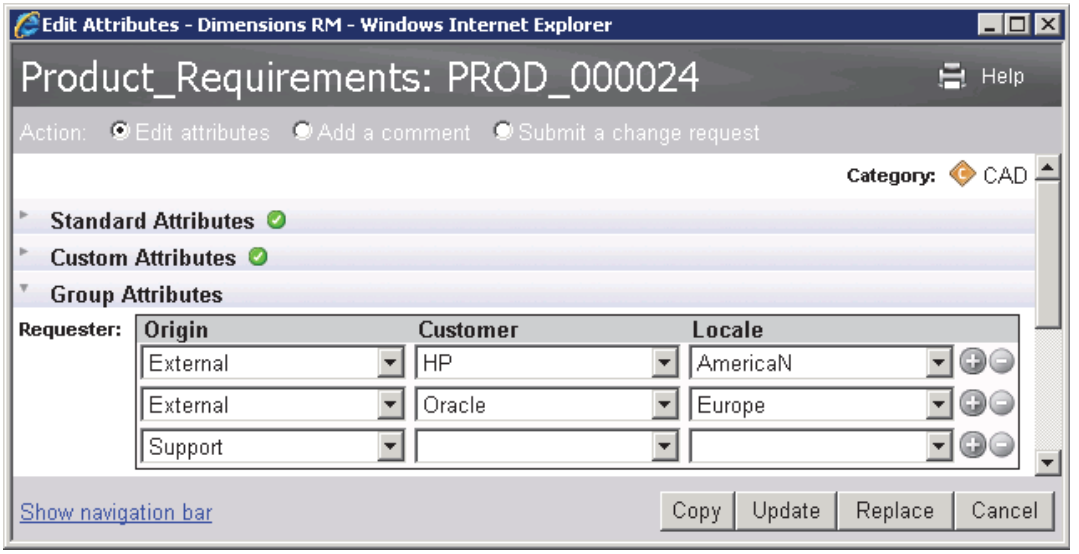
To print a requirement:

1. After selecting the desired requirement in a work pane, select **Edit** from the Requirements group of the Actions pane. The Edit Attributes dialog opens.
2. You must expand sections and sub-sections if you wish to print their contents.
3. Click the **Print** button at the top right of the dialog box. A window opens with content formatted for printing; the RM controls shown in this window are non-functional.
4. Your system's Print dialog opens. Click **Print**. The requirement is sent to your printer.
5. After the content has printed, close the window that displayed the formatted content.

Working with Group Attributes

A group attribute is like a list attribute in that it provides a predefined list of values for user selection. But unlike a simple list attribute, a group attribute is composed of a series of sub attributes. The choices available to the user depend upon the selections they made in the higher level, or parent, attributes within the group attribute.

For example, a group attribute named `Requester` contains the sub (member) attributes: `Origin`, `Customer`, and `Locale`. `Origin` is the first (parent) attribute in the group and includes the following values for selection: `External`, `Marketing`, `Development`, and `Support`. If `External` is selected, customer names are available for selection in the `Customer` sub attribute. If one of the other values is chosen in `Origin`, such as `Support`, there are no values available for selection in the `Customer` sub attribute since those values are only relevant in the case of an external customer.



In the example above, the `Customer` sub attribute also has a child attribute, `Locale`, whose available values depend upon the selection made for `Customer`. The chain of dependencies flows from left to right through the sub attributes of the group attribute.

NOTE As shown in the example above, any given requirement may include multiple value-sets (rows) of a group attribute.

In the Grid View, the example looks like the selected row of the image below:

Category	Rqmt ID	Title	Requester	Text
CAD	PROD_000024	Import SVG files	External-HP-AmericaN External-Oracle-Europe Support	Must be able to import SVG files.
CAD	PROD_000025	64-bit version	External-IBM-Europe	Native support optimized for 64-bit operating systems.
CAD	PROD_000026	32-bit version	Marketing External-HP-Asia	Native support for 32-bit operating systems.

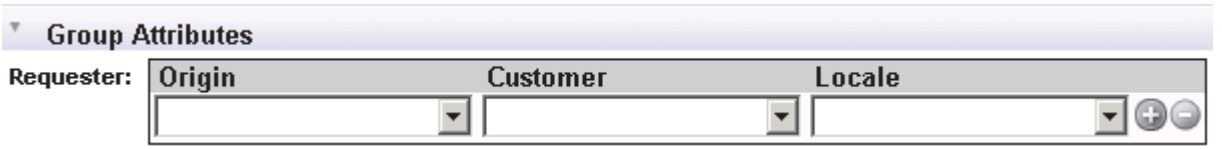
NOTE Each value-set of the group attribute, Requester, appears on its own line within the requirement's row.

For display in the grid, the individual values of the group attribute are separated by a dash character (-). The first line (value-set) in our example is: `External-HP-AmericaN`, so `External` is the value of `Origin`, `HP` is the value of `Customer`, and `AmericaN` is the value of `Locale`.

Setting Group Attribute Values in a Requirement or a Query

You can set the values of a group attribute when you create or edit a requirement. However, you must use the Edit Attributes dialog to edit them, as they cannot be edited from Editable Grid.

Whether you are creating a new requirement, editing an existing one, or creating a query, the Group Attributes section of the relevant dialog looks like the following image (except Query will not have an **Add** (+) button).



Since any member to the right of another is a child whose available values *may* be constrained by the value selected in its parent to the left, generally you might start from the left and select a value for each member of the group attribute in order. However, you can actually select the member values in any order you like; as you do this, the values available for selection in the other members will be constrained according to the dependencies that have been defined.

When creating or editing a requirement, you can create multiple value-sets in any given group attribute. To add another value-set to a requirement, click the **Add** (+) button. The new value-set will initially be populated with the same values as the value-set above it; change the values as needed.

TIP To quickly create value-sets representing each possible value of a given member, select the **Select All** drop-down menu item for that member.

To remove a value-set from the group attribute, click the **Delete** (-) button next to that value-set.

Working with File Attachments

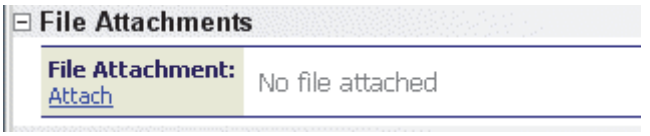
You can add file attachments as attributes to an requirement. Each file attachment attribute for the requirement is represented by a single line in the **File Attachments** section on the **Edit Attributes** dialog box. Each file attachment attribute holds only one file attachment.

TIP To attach multiple files to a single file attachment attribute, store the files in a single zip file and attach the zip file to the attribute.

NOTE Before file attachment lines appear in the **File Attachments** section, an administrator must add one or more File Attachment attributes to each relevant class. For more information, see the *Serena Dimensions RM Administrator's Guide*.

To attach, replace, delete, or download a file:

1. After selecting the desired requirement in a work pane, select **Edit** from the Requirements group of the Actions pane. The Edit Attributes dialog opens.
2. If it is collapsed, expand the **File Attachments** section on the **Edit Attributes** dialog box.



3. Do any of the following:
   - **Attach:** Click this link to attach a file to the requirement. The Add Attachment dialog opens. Type the full path to the file or click **Browse** to locate the file, and then click **OK**.
   - **Replace:** Click this link to replace the existing file with a different file. The Replace Attachment dialog box opens. Type the full path to the file or click **Browse** to locate the file, and then click **OK**.
   - **Delete:** Click this link to detach the file from the requirement.
   - ***FileName*:** Click the filename link to download the file to your computer. You are prompted to either **Save** or **Open** the file.

CAUTION! File attachment changes are not saved until you click the **Update** or **Replace** button as described below.

4. **Show navigation bar / Hide navigation bar:** Click to show/hide the navigation bar at the bottom of the dialog. You can browse through the requirements in sequence with the **First**, **Previous**, **Next**, and **Last** controls.
5. Click one of the following buttons:

- **Copy** to close the dialog and copy the attribute values for use in creating a new requirement. The New *ClassName* dialog opens (see "Creating a New Requirement" on page 50).

NOTE An attribute is copied into the next requirement only if the administrator selected the **Populate On Copy** option when defining the attribute. See the *Administrator's Guide*.

- **Update** to close the dialog and save your changes without creating a new version of the requirement. (This option is not recommended if you need to maintain a history, or audit trail, of changes to requirements over time.)

  Update & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.

- **Replace** to close the dialog and save your changes as a new version of the requirement.

  Replace & Next: As above, except the dialog remains open and the next requirement is loaded. This version of the button appears when the Navigation Bar is visible.

Working with Links

Links allow you to relate requirements to each other. For example, you can link requirements in the Software Requirements class to requirements in the Test Case class. You can then run a traceability report that shows how many software requirements are covered by test cases.

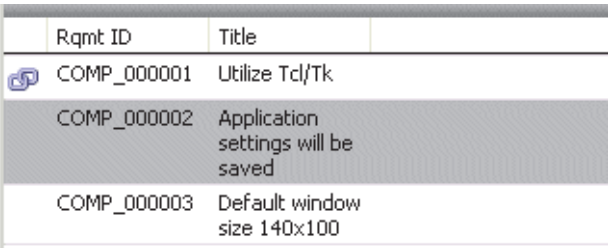
In RM Browser, you can add links to or remove links from a single requirement. The following sections describe two ways to add or remove links. If a you select a requirement from a category in which you do not have "Link" permission for the class, all classes, or the project, the **Create Link** command is disabled.

Links between object versions are maintained even as objects are replaced with new versions. For example, if you link the current versions of two objects and then replace each object with new versions, the link between the previous versions remains intact.

To add or remove links:

1. After selecting the desired requirement in a work pane, select **Create Link** from the Requirements group of the Actions pane. The Link dialog opens.
2. **Remember these options:** Select this checkbox to retain the current settings as the default for future invocations of the dialog.
3. **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.
4. **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

5 **Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog. Each requirement that is linked to the original requirement has a chain icon next to it.



6 **New Search:** Click this button to clear the current search criteria and results.

7 Select the desired requirements in the search results (Ctrl-click to multi-select, Shift-click to select a contiguous group).

8 Do any of the following:

- **Add Link:** Click this button to link the selected requirements to the original requirement.
- **Remove Link:** Click this button to remove the link to the selected requirements.

Suspect Links

After relationships exist between requirements, it is possible for changes in one requirement to affect other requirements. If you are working in a team, you need to know whether a change to a related requirement has possibly rendered other requirements questionable, or "suspect."

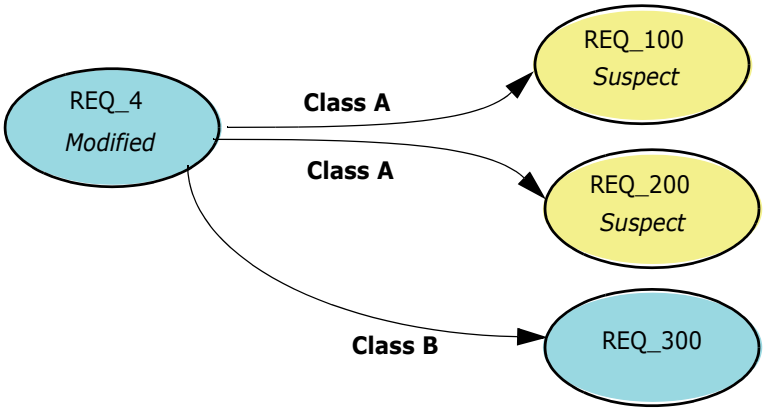
For example, suppose a marketing requirement dictates that all user interfaces adhere to the blue logo color. From this marketing requirement, there may be several linked product requirements that state that the desktop UI, the Web client, and a plugin adhere to the blue logo color. If the marketing manager changes her mind and decides that the red logo color should be used instead, all of the linked requirements become invalid.

Actions that trigger suspect links include updating, replacing, and accepting a change request. Actions that do not trigger suspect links include linking, changing a category, and baselining.

The suspect links feature allows you to clearly see which requirements are under suspicion and which ones are not. After you find a link that is marked as suspect, you can either change the requirement or if you have permission, clear the suspect status.

Not all relationships require linked requirements to be marked as suspect. The administrator decides whether a relationship participates in the suspect links feature. The

following illustration shows how REQ_300 is not a suspect link, because class B does not participate in the suspect links feature.

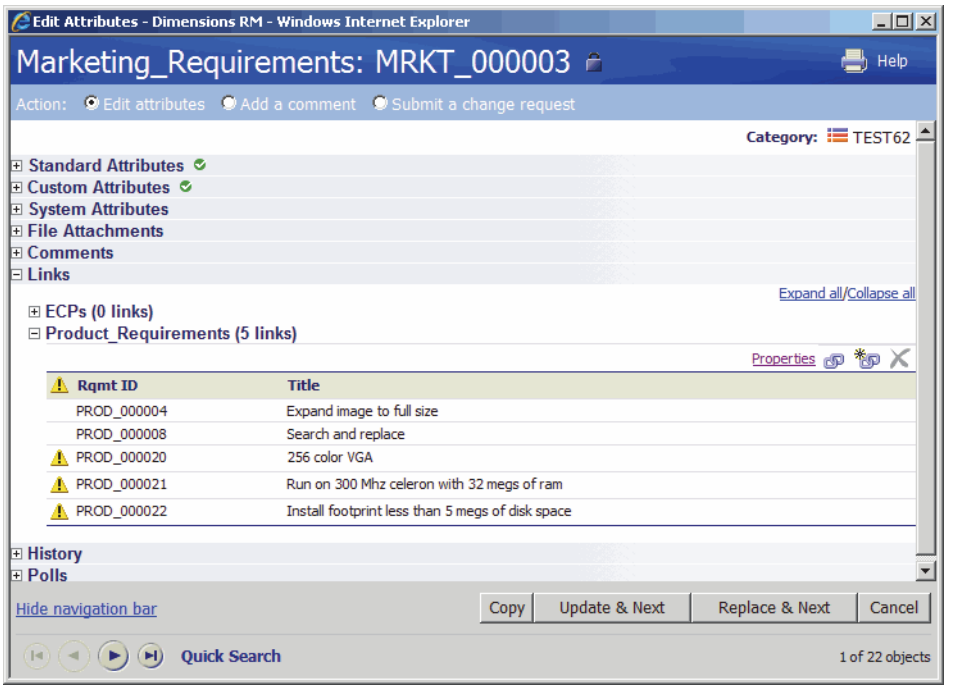


Identifying Suspect Links

To identify suspect links:

1. After selecting the desired requirement in a work pane, select **Edit** from the Requirements group of the Actions pane. The Edit Attributes dialog opens.

2. A suspect link icon ⚠ is displayed in the top left corner of the dialog box if the requirement is suspect. The icon is not displayed once all of the links that caused this requirement to be marked as suspect are cleared.



3. Expand the **Links** section.

4. Look at each suspect requirement and examine whether the change affects the requirement.

5 Change the requirement if the change affects it, or clear the suspect link if it does not affect the requirement.

NOTE The suspect link icon is displayed in other areas of RM Browser, such as in the Quick Search query results and the navigation tree of the Document and Traceability work pages.

Clearing Suspect Links

To clear suspect links:

1 Clear all links that caused this requirement to be marked as suspect by doing one of the following:

- Click the **Clear all suspect links** button ⚠ in the title bar of the **Edit Attributes** dialog box to clear all suspect links associated with this requirement.
- Click the **Clear all suspect links** link at the top right of the **Links** section.

2 Clear individual links that caused this requirement to be marked as suspect by selecting the requirement or requirements and then clicking the **Resolve Suspicion** icon at the top right of the **Links** subsection. When the last suspect link is cleared, the ⚠ icon is no longer displayed in the title bar of the dialog box.

Merging Requirement Changes

NOTE RM Browser can be configured to use locking or merging to handle the situation when multiple users want to edit a requirement or chapter at the same time. This section describes requirement merging. For information about the locking mechanism, see "About Requirement Locks" on page 64.

This configuration is set in the **Project Settings** dialog. See "Configuring Project Settings" on page 152.

If RM Browser is configured to use merging, requirement changes must be merged when two users edit a requirement at the same time.

Changes can be *automatic* or *conflicting*, as described in the following table.

Change Type	Description
Automatic	When the change made by the first user is the same as the change made by the second user or when the change made by the first user is distinct from any change made by the second user, automatic merging can occur because a review of the change is not strictly necessary. However, it is recommended that the second user review the change made by the first user before accepting it.
Conflicting	When the change the second user makes conflicts with the change the first user made, the second user must review the changes and do one of the following: ■ Accept the change the second user made ■ Accept the change the first user made ■ Accept the original value ■ Combine the changes manually by editing the value directly in the main part of the dialog box

The following scenario summarizes the actions that lead to requirement merging.

1 Two users edit a requirement at the same time.

2 The first user clicks **Replace** on the **Edit Attributes** dialog box. The requirement is replaced and the **Edit Attributes** dialog box closes.

3 The second user clicks **Replace** on the **Edit Attributes** dialog box.

4 The second user is notified that the first user made one or more changes to the requirement. The notification either tells the second user that the merge can be done automatically (because the change the first user made does not conflict with the change the second user made) or that the changes conflict and must be resolved before the second user can replace the requirement.

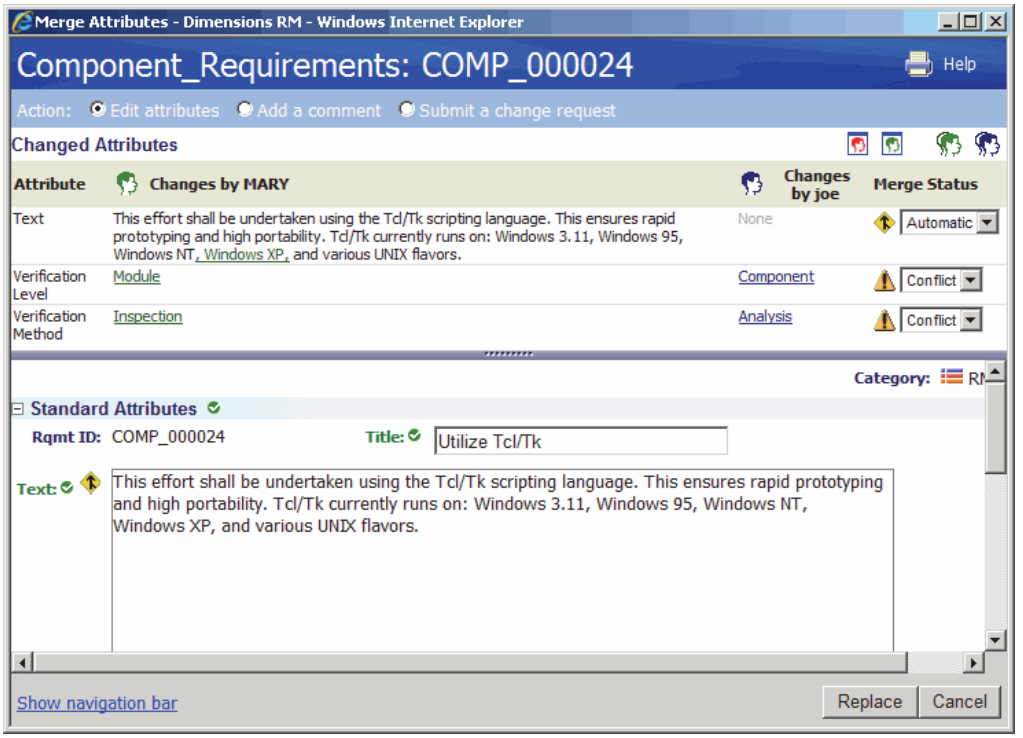
5 The second user clicks **OK** on the notification message. The **Edit Attributes** dialog box becomes the **Merge Attributes** dialog box. The **Merge Attributes** dialog box differs from the **Edit Attributes** dialog box in that the **Merge Attributes** dialog box:

- Has a section at the top that summarizes the changes and provides a user interface for merging the changes
- Does not have an **Update** button
- Has visual indications next to its attributes that identify the type of merge that the second user selected

6 The second user uses the merge section at the top of the **Merge Attributes** dialog box to resolve the changes as described in "Viewing Prior Versions of the Requirement" on page 63 and "Merging Changes" on page 64.

Merge Status

The merge status of the changes made by Mary and Joe are highlighted in the **Changed Attributes** section at the top of the **Merge Attributes** dialog box.



Joe made the first change when he added "Windows XP" to the *Text* attribute. In the **Merge Status** column, **Automatic** is selected in the list, because the change does not involve a conflict with a change that Mary made. The icon that represents an automatic merge is a diamond shape with a merge arrow in it and is displayed to the left of the **Merge Status** list and to the left of the **Text** attribute box in the main part of the dialog box.

The second change and third change involve conflicts. In the second change, Joe changed the *Verification Level* attribute value to **Component**, but Mary changed this attribute value to **Module**. In the **Merge Status** column, **Conflict** is selected in the list. The icon that represents a conflict is a triangle with an exclamation point in it and is displayed to the left of the **Merge Status** list and to the left of the *Verification Level* attribute in the main part of the dialog box.

The third change also involves a conflict because Mary changed the *Verification Method* attribute value to **Inspection** while Joe changed it to **Analysis**.

Viewing Prior Versions of the Requirement

It can be useful to view prior versions of the requirement before you resolve changes.

- The second user can view the original version of the requirement by clicking the **View original version of requirement** button or by clicking **Original** in the appropriate **Merge Status** column list.

- The second user can view the requirement in the state it was in after the first user made changes but before the second user made changes by clicking the **New version of requirement prior to your changes** button .

Merging Changes

After the second user has decided how to resolve the changes, he or she can merge them.

To merge changes:

1 If **Automatic** is selected in the **Merge Status** column list box, perform one of the following steps:

- Retain the **Automatic** selection to accept the change.
- Select the name of the user who made the change to accept the change.
- Select **Original** to restore the attribute to its original value.

2 If **Conflict** is selected in the **Merge Status** column list box, perform one of the following steps:

- Select the name of the user whose change you want to accept.
- Select **Original** to restore the attribute to its original value.
- Edit the value manually in the main form so that it matches the value you want to accept.

3 If you want to accept all changes made by a particular user (for example, Mary or Joe), click the **Accept all changes by Mary** button or the **Accept all changes by Joe** button .

4 Click **Replace**.

About Requirement Locks

NOTE RM Browser can be configured to use locking or merging to handle the situation when multiple users want to edit a requirement or chapter at the same time. This section describes the locking mechanism. See "Merging Requirement Changes" on page 61.

This configuration is set through the Project Settings dialog, which is available only to administrators. See "Specifying the Concurrent Editing Mode" on page 152.

Requirements and chapters (including the "root chapter" of a document, which is the document itself) are locked persistently when you open the respective "edit" dialog box. When a requirement or chapter is locked, a lock icon is displayed in the dialog box banner, and other users cannot edit the requirement or chapter.

The lock icon is displayed in the following scenarios:

- The current user locked the requirement.
- Another user locked the requirement.
- The requirement is CM locked.

- The requirement is baselined.

In the last three scenarios, the user receives a warning message about the lock. A tooltip, which is displayed when you hover over the icon, indicates the reason the requirement is locked.

Locks are removed when one of the following occurs:

- You close the dialog.
- You save changes.
- You use the Administer Locks dialog to remove locks (see "Managing Requirement Locks" on page 152). Users can unlock the requirements or chapters they locked; users with *Unlock* permission can unlock requirements or chapters that others locked.
- An administrator uses RM Manage to grant the Unlock permission to users. For information about granting permissions, see the *Serena Dimensions RM Administrator's Guide*.

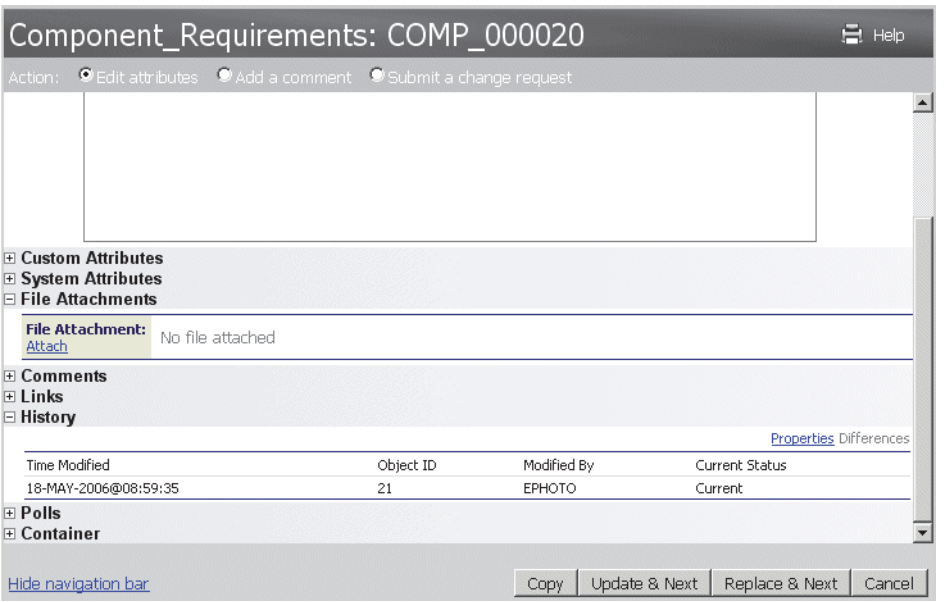
Viewing Requirement History

A requirement history lets you track changes to a requirement over time. A **History** section is displayed on a requirement form if the requirement is displayed in grid format. You can select the attributes that you see in the form and the order in which the attributes are displayed. You can also use the **History** section to see the differences between the requirement that is open and a selected version of the requirement or between two other versions of the requirement.

To view the history of a requirement:

1 After selecting the desired requirement in a work pane, select **Edit** from the Requirements group of the Actions pane. The Edit Attributes dialog opens.

2 Expand the **History** section.



Changing the Attributes in the History Section

You can change the attributes that you see in the **History** section, and specify the order of the attributes.

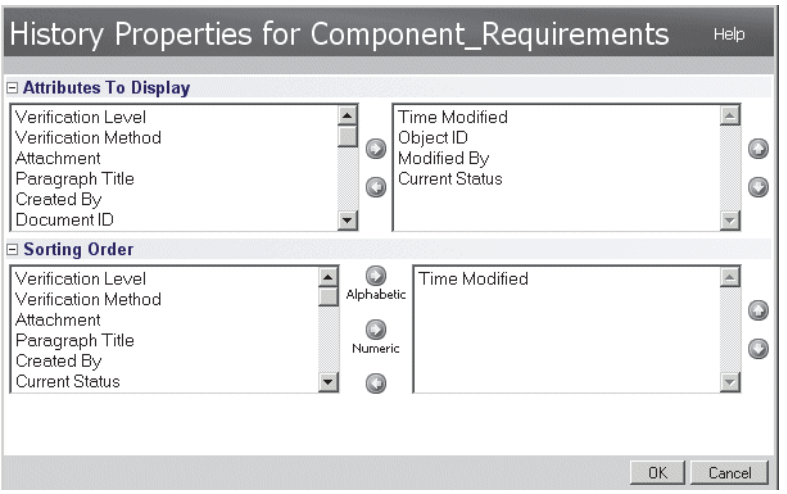
NOTE

- In the **History Properties** dialog box, if you move all attributes from the boxes on the right to the **Attributes to Display** and **Sorting Order** boxes, the default attributes and sorting are used in the **History** section.
- The attributes and their order are remembered for each class and are used when viewing the history for any requirement in that class.

To change the attributes:

1 Expand the **History** section, if it is not already expanded.

2 Click **Properties**. The **History Properties** dialog box opens.



3 To specify the attributes to display and their order, perform the following tasks:

a Select one or more attributes in the **Attributes to Display** list.

b Click the right arrow button. The attribute or attributes are moved to the display list on the right. If you change your mind, select the attribute and click the left arrow button to move it back to the **Attributes to Display** list. (Alternatively, you can double-click an attribute to add it to the display list on the right.)

c Use the up and down arrow buttons to the right of the display list to change the display order of the columns.

4 To specify the sort type and order:

a Select one or more attributes in the **Sorting Order** list.

b Click one of the following buttons:

- **Alphabetic** button  for a simple alphabetic sort.
- Numeric button  for a numeric sort. This type of sort can be used for alphanumeric attributes such as paragraph numbers.

c Use the up and down arrow buttons to the right of the sort list to specify how you want data sorted.

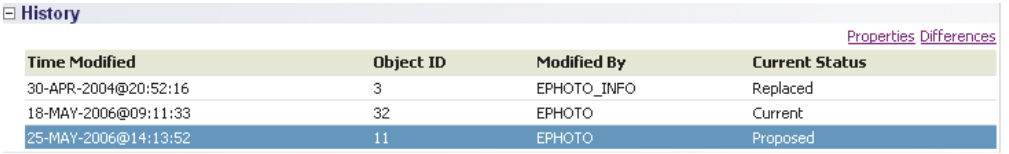
For example, select **Paragraph ID** if you want the query results to be sorted in the order presented in the original document, and click the **Numeric** button to sort by paragraph number. Then select **Priority** and click the **Alphabetic** button if you want the requirements with the same paragraph ID sorted by the priority assigned to them.

Viewing History Differences

You can view the differences between the open requirement and a selected version of the requirement, or between two versions of the requirement.

To view the differences:

1 Expand the **History** section, if it is not already expanded.

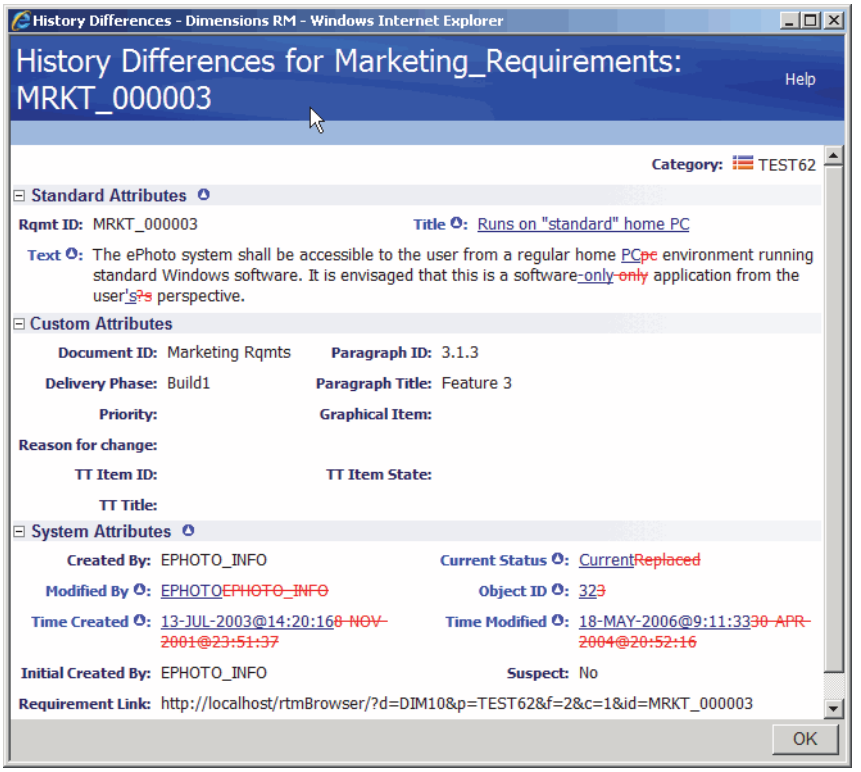


2 Click **Differences**.

3 Perform one of the following actions:

- If you want to compare the open requirement with another version of the requirement, select the other version and then click **Differences**.
- If you want to compare two versions of the requirement, select them and then click **Differences**.

The **History Differences** dialog box opens, and contains visual indications of what changed between the two versions.



Note the following points:

- If only one version is displayed in the **History** section, and you click **Differences**, an error message is displayed, because you cannot compare a requirement to itself.
- If you select more than two versions in the **History** section, the **Differences** link is disabled, because you can only compare two versions at the same time.
- The version with the greater Object ID is used as the newer item.
- A new requirement is not displayed in the **History** section.
- In the `default.xml` file, the **History** section is called "history." If this conflicts with the name of a user-customized section, the administrator must modify the customization. For more information about Web form customizations, see the *Serena Dimensions RM Administrator's Guide*.

Polling

Polling allows you to solicit feedback about a requirement from selected users. Polls are typically used to decide whether a specific requirement should be accepted, or to reach consensus concerning the content of a requirement.

A poll consists of a question, at least two answers, and at least one participant. In RM Browser, if you have the appropriate permissions, you can create and modify polls. Poll participants use RM Browser to vote and view current poll results.

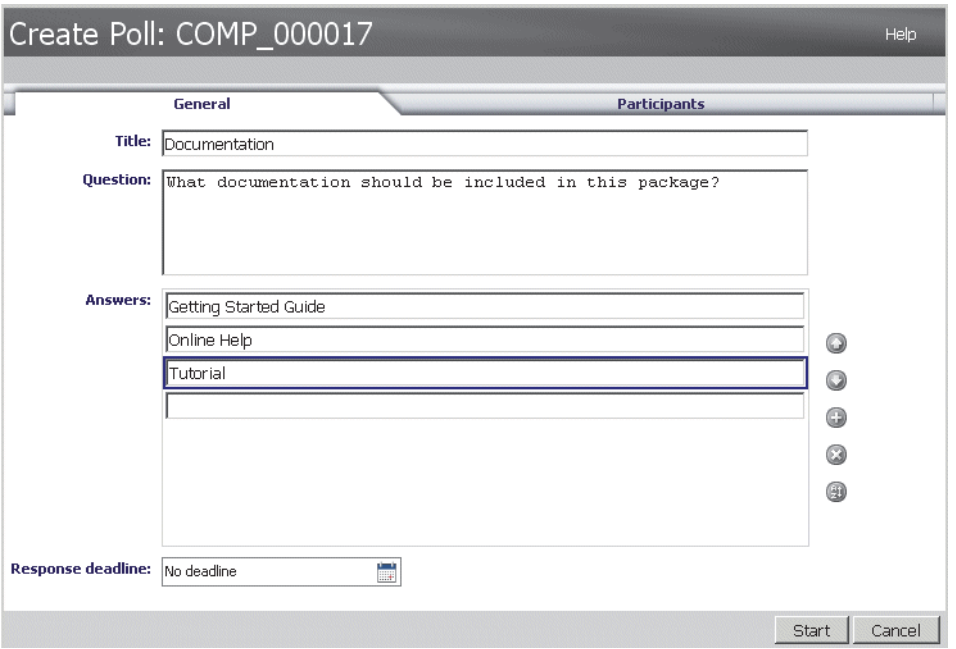
Creating a Poll

A user with the "Create" permission for the Poll class can create a poll. Before a poll can be created, the Poll class and a relationship to the required classes must be added to the database using the Class Definition tool. When you create relationships between other classes and the Poll class, the other classes must be primary and the Poll class must be secondary. For more information, see the *Serena Dimensions RM Administrator's Guide*.

To create a poll:

1. After selecting the desired requirement in a work pane, select **Setup Poll** from the Requirements group of the Actions pane. The Create Poll dialog opens.
2. Type the title of the poll. The poll title does not have to be unique; other polls can have the same title.
3. Type the question for which you need feedback.
4. Type at least two answers to the poll.

   There is no practical limit to the number of answers that you can include. When you begin typing in the last answer field, a new answer field is automatically created below it.



5. To rearrange the answers:
   - Click the **insert** button to add a new answer above the selected answer, instead of adding it to the end of the list.
   - Select an answer and click the **delete** button to delete it. Blank answers do not have to be deleted because they are ignored.
   - Click the up arrow and down arrow buttons to move the selected answer up or down in the list.
   - Click the **sort** button to sort the answers alphabetically.

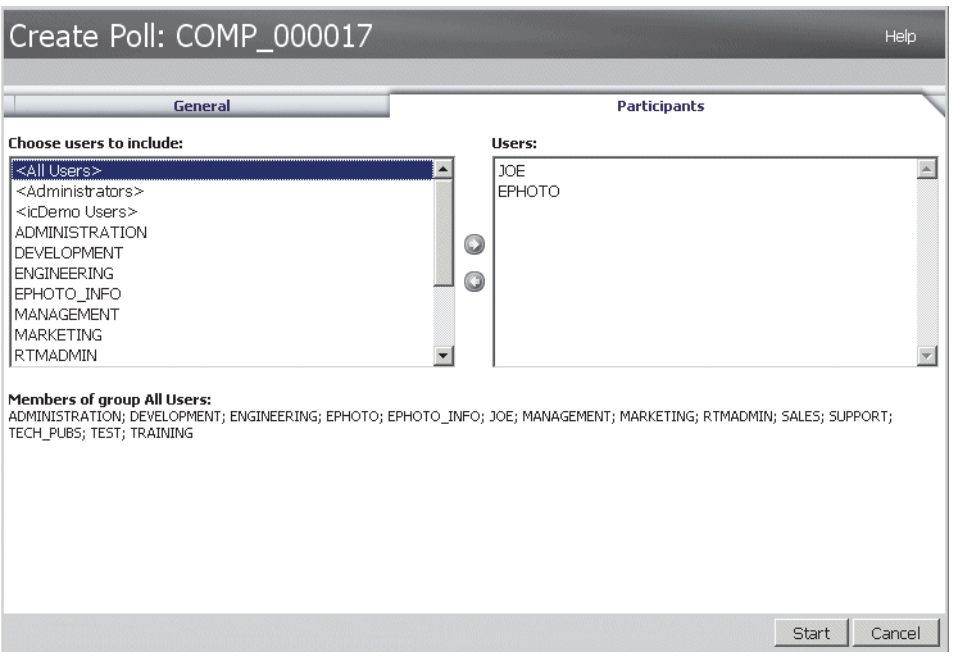
6 In the **Response deadline** section, either select **No deadline** or select the date and time that the poll should close.

The poll closes when the selected date and time have passed, when the poll creator clicks the **Stop** button, or when all participants have voted.

7 Click the **Participants** tab.

8 Select the users you want to participate in the poll. A minimum of one participant is required.

If you select a group, its members are displayed below the lists on the **Create Poll** dialog box.



9 Click **Start** to start the poll.

Modifying a Poll

The user who created the poll or a user with the "Update" permission for the Poll class can modify an existing poll. If the poll is already active, you can stop the poll, change the deadline, or add users or groups to the list of participants. The user cannot change the poll title or question.

To modify a poll:

1 Click **Modify** under **Polls** on the **Edit Attributes** dialog box or on the Requirements View. The **Modify Poll** dialog box opens.

2 Change the polling information.

3 Click **Modify**.

Closing a Poll

To close a poll:

- Click **Modify** under **Polls** on the **Edit Attributes** dialog box. The **Modify Poll** dialog box opens.
- Click **Stop**.

  The poll also closes if the specified deadline passes or if all participants have voted.

Casting a Vote

Users with the "Read" permission for the Poll class can vote in a poll. Poll participants cast votes from the **Cast Vote** dialog box. Participants typically receive an e-mail message when the poll has started that provides a link that takes them to the **Cast Vote** dialog box. The **Cast Vote** dialog can also be accessed from the **Polls** section of the **Edit Attributes** dialog box or from the List view of Requirements View.

NOTE Before polling e-mail notifications can be sent, an administrator needs to configure and enable the RM Mail service. For information, see the *Serena Dimensions RM Administrator's Guide*.

To cast a vote:

1. Do one of the following:
   - Click the link in an e-mail message you received, and then log in to Dimensions RM.
   - Click the **Vote** link from the **Polls** section of the **Edit Attributes** dialog box or List view of Requirements View.

   The **Cast Vote** dialog box opens.
2. Select a single answer. Before you vote, you can view the details of the requirement for which the poll is being placed, and view the current results of the voting. To do so, click the link at the bottom left of the dialog box.
3. If you want, type a comment in the **Additional comment** section.
4. Click **Vote**.

Viewing Polling Results

You can view the details of a poll that is in progress or has already completed. The current polling status is displayed after you cast a vote. You can also view the polling status from the **Edit Attributes** dialog box or the List view of Requirements View.

To view polling results:

1. Do one of the following:
   - Cast a vote.
   - Click the **View details** link at the bottom of the **Cast Vote** dialog box before you cast your vote.
   - Edit a requirement and display the Edit Attributes dialog box.

- Navigate to the List view of Requirements View.

2 If you used the first method in Step 1, the **Poll Results** dialog box opens.

3 If you used the second, third, or fourth method in the preceding step, expand the **Polls** section on the dialog box that opens (if it's not already expanded), and then expand the poll you want to view.

4 To view who voted for each answer and their comments, click **Show details**. To hide this information, click **Hide details**.

5 To view a list of participants who have not voted yet, click **View users who haven't voted**.

Adding Built-In Queries to Your My Work Page

You can view polls from a pre-built section on your My Work page. This section appears by default.

Participating in Discussions

You can start a discussion by adding a comment to a requirement or you can reply to comments that are already part of a discussion. There are two ways you can view discussions: date view and subject view.

NOTE To add a comment or reply to a comment, you must have the following permissions:

- "Create" permission on the Comment class
- "Read" permission on the requirement class
- "Create" permission on the relationship between the Comment class and the requirement class.

Adding a Comment from the Menu Bar

To add a comment from the menu bar:

1 After selecting the desired requirement in a work pane, select **Add Comment** from the Requirements group of the Actions pane. The Add a Comment dialog opens.

2 Click **Add Comment** button. The Add a Comment dialog appears.

3 Type a title for the comment in the **Subject** box.

4 Type the comment in the **Comment** box. There is no practical limit to the number of characters.

5 Select your role from the **Role** list to indicate your perspective in creating the comment. An administrator can configure this dialog box to omit the **Role** menu.

6 Click **Add** or **Add & Close**.

Adding a Comment from a Discussion

To add a comment from within a discussion:

1 In the Add a Comment dialog box or in the Edit Attributes dialog box for a requirement, do one of the following:

2 Click **Start a new discussion** at the top of the **Comments** section.

- Click **Reply** at the bottom of a comment.

The **Add a comment** action becomes active, and the dialog box expands to include a comments section.

3 If you are starting a new discussion, type the subject of the discussion in the **Subject** box. If you are replying to a comment, the title is already filled in and has *Re.* pre-pended to it. If you change the title, the comment is no longer part of the original discussion thread, but will start a new discussion.

4 Type the comment in the **Comment** box. There is no practical limit to the number of characters.

5 Select your role from the **Role** list to indicate your perspective in creating the comment. An administrator can configure this dialog box to omit the **Role** menu.

6 Click **Add** or **Add & Close**.

Changing the Discussion View

To change the discussion view:

- Click **Group by Subject** or **Group by Date** at the top right portion of the **Comments** section.

Submitting a Change Request

To submit a change request, you must have "Create CR" permission for classes.

NOTE To submit a change request that proposes the creation of a new requirement, see "Submitting a Change Request for a New Requirement" on page 52.

To submit a change request for a requirement:

1 After selecting the desired requirement in a work pane, select **Change Request** from the Requirements group of the Actions pane. The Submit a Change Request dialog opens.

2 Change the attributes in the attributes sections as desired. Changes are marked by a triangle icon .

3 In the **Reason for change** box, type the justification for the change request. There is no practical limit to the number of characters. The HTML editing control is not available in the **Reason for change** field.

4 If you want to link the change request to an Engineering Change Proposal (ECP) class object, select the object in the **ECP** list. The **ECP** list box does not appear if no ECPs have been defined.

5 **Exchange in:** If the request was submitted from a document, you can select this checbox to replace the version in the document with the new version.

6 Do one of the following:

- Click **Submit** to submit the change request.
- Click **Submit & Next** to submit the change request and then load the next requirement in the query results.
- Please note:
  - The labels on the buttons vary depending on whether the navigation bar is shown or hidden. If it is shown, **Submit & Next** appears. If it is hidden, **Submit** appears.
  - You can also submit a change request for a new requirement from the **New Change Request** dialog box. For more information, see "Submitting a Change Request for a New Requirement" on page 52.

7 The navigation bar at the bottom of the dialog box allows you to navigate to other requirements from the query from which the displayed requirement was generated. To hide the navigation bar, click **Hide navigation** bar. To show the navigation bar, click **Show navigation bar**. The navigation bar is not visible if there only one requirement in the query results. The name of the entity from which the list of requirements was generated is displayed in the navigation bar. These entities include a filter name, a script name, **Quick Search**, and **Query Results**.

8 To navigate to the next or previous requirement in the query from which the requirement was generated, click the next or previous button. To navigate to the first requirement or last requirement, click the first or last button.

Reviewing a Change Request

When a change request is accepted, the changed requirement replaces the current version of the requirement. If there are multiple change requests against the requirement, any requests that have not been rejected are linked to the new requirement. Therefore, you should reject unacceptable requests. For traceability, the replaced requirement is still linked to any change request, whether the request was accepted or rejected.

Pending Change Requests is a prebuilt section that you can add to your My Work page. When a change request is submitted against a requirement you own or a change request for a new requirement is submitted, the change request is added to this section.

To review change requests submitted against a requirement:

1 After selecting the desired requirement in a work pane, select **Approve/Reject** from the Requirements group of the Actions pane. The Approve Changes dialog opens.

2 A list of all pending change requests against the requirement is displayed in the left pane. Select a change request to view its details.

The differences between the proposed changes and the current version are marked in the text.

3 Enter a reason for accepting or rejecting the change, if necessary.

4 Click **Accept** to accept the change request or **Reject** to reject it. In either case the reason for change entered when the request was submitted will be carried forward.

NOTE If the requirement is in an ECP-controlled document that you have not assigned an ECP to, and **Update to Current (Tip)** is in effect, the action will be halted and you will receive a message upon clicking the **Accept** button. See "Assigning an ECP to a Document" on page 107.

5 To accept a previously rejected change request, do the following:

a Click the **Show previously rejected requests** link at the top left of the dialog box.

b Select the rejected change request.

c If you have permission to approve the rejected change request, the **Accept** button is enabled. Click the **Accept** button. Once you accept a rejected change request, you cannot reject it again.

6 Click **Close**.

Adding Requirements to an Existing Collection

From the Requirements view, you can add requirements to an existing collection or collections simply by selecting them and clicking a button.

TIP To add a larger and/or more complex set of requirements to a collection, use Attribute Constraints and Relationship Constraints. See "Managing Requirements in a Collection" on page 133.

To add requirements to an existing collection:

1 After selecting the desired requirements in a work pane, select **Add to Collection** from the Requirements group of the Actions pane. The Add to Containers dialog opens.

2 Select the desired collection or collections.

TIP To filter the list of containers, enter a string in the **Find Container** field.

3 Click the **OK** button.

Deleting a Requirement

When you delete a requirement, it is marked as deleted, but the data is retained. You can delete requirements whose state is "Current" if you have "Delete" permission for its class. When you delete a requirement, a new version is created to ensure that a full audit trail of the requirement's deletion is maintained.

You can undelete requirements using one of the other Dimensions RM tools or by asking your administrator. When you undelete a requirement, a new version replaces the previous version to ensure that a full audit trail of the requirement's deletion is maintained.

To delete a requirement:

1. After selecting the desired requirement in a work pane, select **Delete** from the Requirements group of the Actions pane.
2. You are prompted to confirm the operation. Click the **OK** button.

Removing a Requirement Version

When you remove a requirement, the selected version is permanently removed from the project, and the previous version is made current. You can remove requirements whose state is "Current" if you have "Remove" permission for its class.

CAUTION! A remove operation cannot be undone.

To remove a requirement:

1. After selecting the desired requirement in a work pane, select **Remove** from the Requirements group of the Actions pane.
2. You are prompted to confirm the operation. Click the **OK** button.

Exporting the Contents of a Work Page

You can export the contents of a work page to any of the following types of files:

- Excel Spreadsheet (*.xls)
- Word Document (*.doc)
- XML Document (*.xml)
- Web Page (*.html)
- CSV (Comma delimited) (*.csv)
- Plain Text (*.txt)
- Plain Text (Table) (*.txt)

To export a work page:

1 Select **Export As** from the top group of the Actions pane. The Export As dialog opens.

NOTE If any sections are expanded when using Grid view, only those sections will be exported. Else all sections are exported from Grid view.

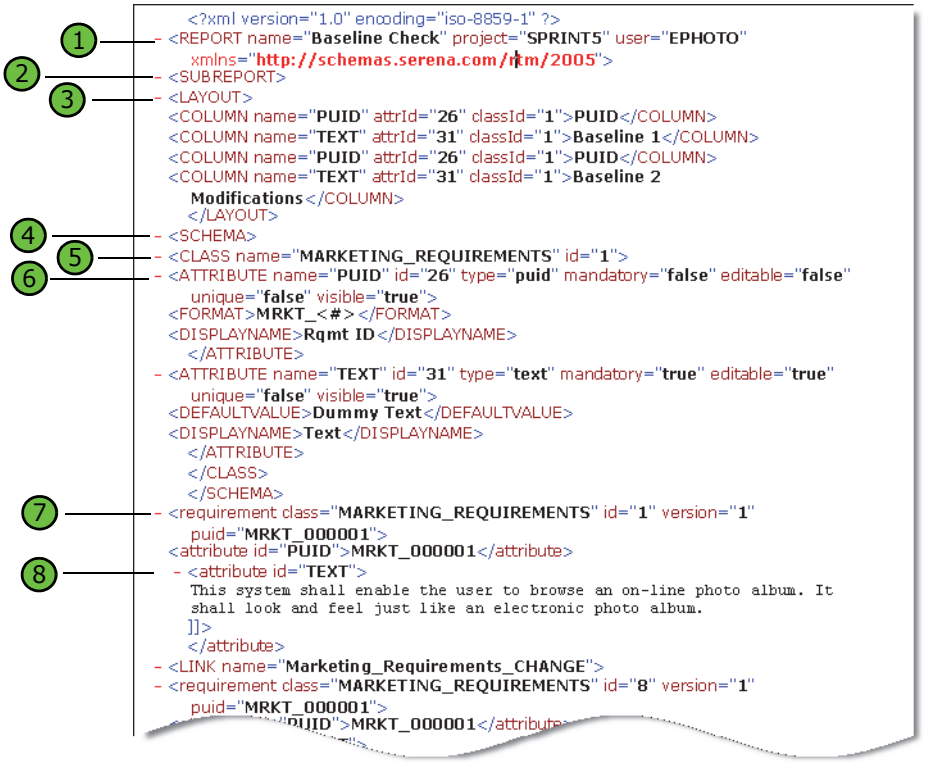
2 **Export as:** Select the desired file format from the list.

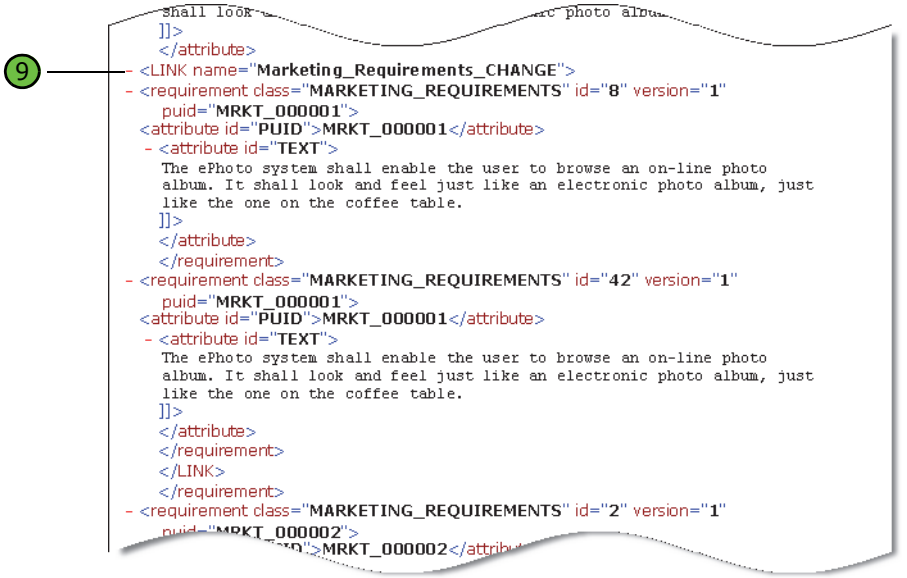
3 Click the **All Pages** or **Selected Page** button.

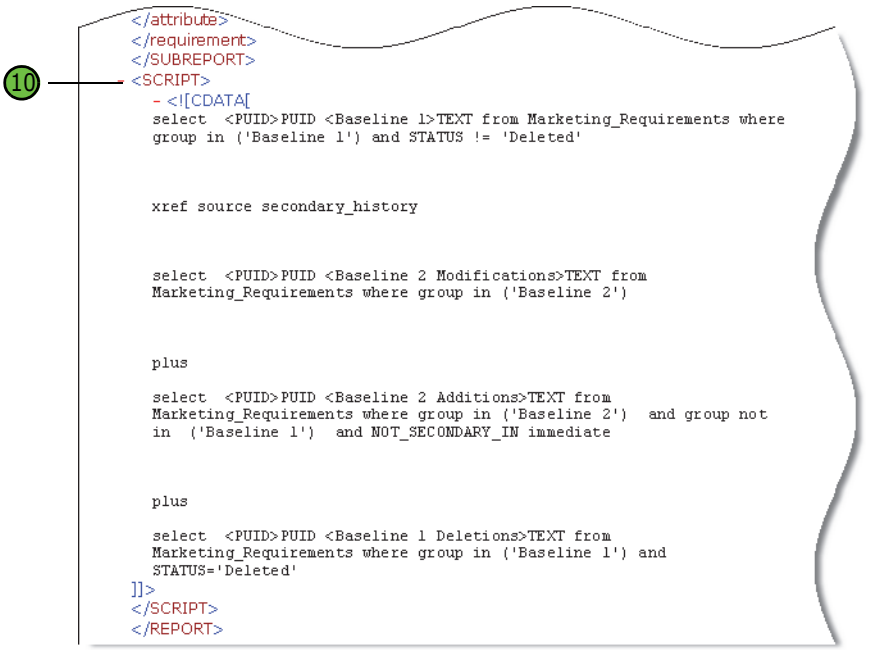
4 Select **Save** or **Save As** when prompted by your browser.

Understanding a Saved XML Document

This section includes excerpts from an example XML document that is produced from the Save As XML command, and a table that describes the elements in the excerpts.







The following table describes the elements in the preceding excerpts. Note the following terms:

- **Tags** are enclosed by < > brackets.
- **Attributes** are anything of type name=value within a tag.
- **Content** is any plain text between opening and closing tags.

Key	Description
1	<REPORT> is the root tag in the XML document. It has attributes for the query name, the project name, and the user who performed the query.
2	A PLUS statement in a query can be used to join multiple scripts into one script. The outcome of the resulting script is multiple reports produced in one data extraction run. If a PLUS report is run, there are additional <SUBREPORT> tags for each subreport.
3	Each <REPORT> or <SUBREPORT> tag contains a <LAYOUT> tag that describes the mapping from the Dimensions RM attribute names and the display names to be used in a report.
4	The <SCHEMA> tag contains the classes used in the query and more details about the attributes involved. **NOTE:** The <LAYOUT> tag may define the same attribute more than once, but the <SCHEMA> tag displays the attribute only once.
5	The <CLASS> tag is created for each requirement that is returned from the query. The content of the tag is the class name and the class ID.
6	Each <ATTRIBUTE> tag has attributes for name, ID, and type; and mandatory, editable, unique, and visible flags. For each RM attribute of type "puid," "alphanumeric," or "date," a <FORMAT> tag is created. The attribute type determines the attributes of the <FORMAT> tag. For each Dimensions RM attribute of type "list," a <LISTVALUES> tag is created that lists the valid values for the attribute.
7	For each Dimensions RM requirement returned from the query, a tag is created that matches the Dimensions RM class name (for example, <requirement class>) and that contains the requirement ID. Each requirement tag then contains the attributes requested in the query (see element number 8).
8	For each Dimensions RM attribute requested in the query for a particular requirement, a tag is created that matches the Dimensions RM attribute name (for example, <TEXT>). The content of the tag is the value of the Dimensions RM attribute.
9	The XREF statement in a query allows you to show the linkage or traceability between requirements. If an XREF report is run, the relationships are shown as nested <LINK> tags. The "name" attribute is the name of a Dimensions RM relationship. The <LINK> tag contains tags for the related requirements. There may be more than one <LINK> tag at the same level to indicate multiple links to the same requirement. The same requirement may appear more than once in the XML output because of different relationships to the same requirement.
10	The last tag in the report is the <SCRIPT> tag. The content of the tag is the query string used for the query. Because it may contain incompatible XML text, it is wrapped in a [!CDATA] block to preserve all text.

Printing the Contents of a Work Page

You can print the contents of the Editable Grid or Grid views.

NOTE To print the From view of a single requirement, see "Printing a Requirement" on page 54.

To print a work page:

1. Select **Print to fit** from the top group of the Actions pane. A window opens with the content formatted for printing.
2. Your systems's Print dialog opens. Click **Print**. The content is sent to your printer.
3. After the content has printed, close the window of formatted content.

Refreshing Data

To refresh the current work page, select **Refresh View** from the first group in the Actions pane.

NOTE Pressing the F5 key in RM Browser does not refresh the displayed data. This action instead brings the RM Browser page to its initial state.

Copying a Requirement's URL to the Windows Clipboard

You can copy the URL of a requirement and paste it into a file for future use and reference. When that URL is later invoked, it will open RM Browser to that requirement.

You can copy a URL that will always lead to the most current version of the requirement, or you can copy a URL to a specific version of the requirement. See the appropriate section below.

Copying the URL of the Latest Version of a Requirement

To copy the URL of the latest version of a requirement:

1. Open the requirement for editing. See "Editing a Requirement" on page 53.

2 Expand the **System Attributes** section of the Edit Attributes dialog.

3 Right-click on the URL labeled as the **Requirement Link**.

4 Select **Copy Shortcut** (or a similar menu item, depending upon the browser you are using).

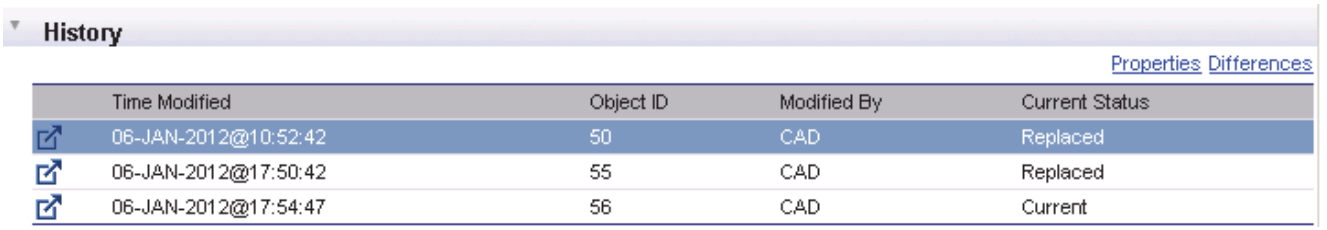
The URL is now on the Windows clipboard. You can now paste it into the file in which you wish to keep it.

Copying the URL of a Specific Version of a Requirement

To copy the URL of a specific version of a requirement:

1 Open the requirement for editing. See "Editing a Requirement" on page 53.

2 Expand the **History** section of the Edit Attributes dialog.



3 Right-click the link icon next to the version that you want.

4 Select **Copy Shortcut** (or a similar menu item, depending upon the browser you are using).

The URL is now on the Windows clipboard. You can now paste it into the file in which you wish to keep it.

Chapter 4

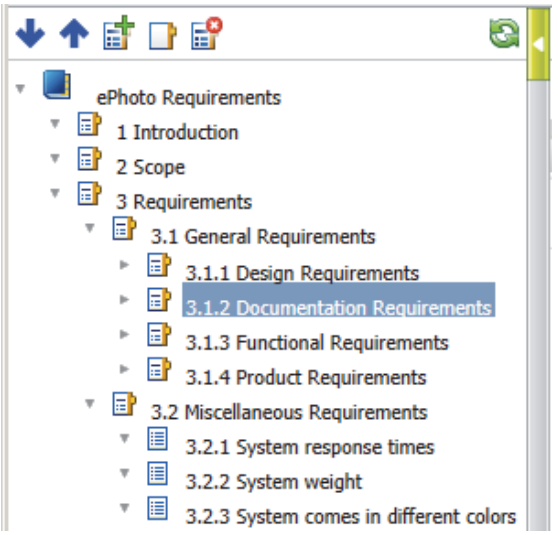
Working with Documents

Navigation and Controls of the Document Work Page

This work page has the following unique controls and features:

- "Navigation Pane" on page 84
- "Detail Pane" on page 85

Navigation Pane



This appears on left side of the page and includes the following elements:

- **Expand/Collapse:** This button expands or collapses the pane.
- **Down/Up:** These buttons move the selected chapter or requirement down or up in the document's structure.
- **New chapter:** This button invokes the New Chapter. dialog. The new chapter will be placed at the same level as the currently selected chapter, unless the A**dd as subchapter** checkbox is enabled or the root of the document is currently selected. See "Creating a Chapter" on page 103.
- **Format chapter:** This button invokes the Format Chapter dialog where you can configure how the chapter is displayed in the Details pane and when published. See "Formatting Chapters" on page 91.
- **Delete chapter:** This button deletes the currently selected chapter. To complete the operation, you must click the **OK** button on the resulting confirmation dialog. See "Deleting a Chapter" on page 105.
- **Reload this document:** This button retrieves the currently open document from the server and reloads it into the work page.

- **Root:** This is the root level of the document.

NOTE The Foreword, if there is one, is located in the root of the document. It typically contains items such as the company logo, copyright information, and a history table. It does not include the Table of Contents.

When the document is published, the Foreword is displayed before the Table of Contents.

- **Chapter:** This a chapter in the document.
- **Requirement:** This is a requirement in the document.
- **Suspect Link:** This is a requirement that has a suspect link.

Note the following functional aspects of the Navigation pane:

- Chapters and requirements are automatically numbered using a hierarchical numbered outline format. This numbering updates whenever you change the structure or order of the document's contents.
- To make a requirement a subrequirement of a requirement, select the requirement's name and drag it to the parent requirement.
- To make a chapter a subchapter of another chapter, select the chapter and drag it to the parent chapter.
- The classes that the document or a chapter can include are displayed as a tool tip when you hover your cursor over the name of the document or chapter.
- The PUID and object ID of each requirement is displayed as a tool tip when you hover your cursor over the requirement name.
- The contents of the element selected in the Navigation pane will be displayed in the Detail pane.

Detail Pane

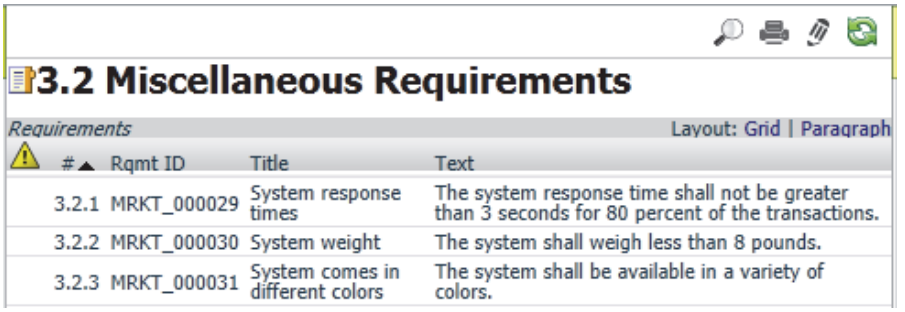
The look of the Detail pane depends on what element is selected in the Navigation pane, what layout is selected in the Detail pane, as well as the format settings in effect at the document and chapter levels.

If the selected chapter or document root contains:

- **Only requirements**, it can be displayed with either the Grid or Paragraph layouts. The user can switch between the layouts as desired, as well as set the default layout used for a given chapter or the entire document.
- **Only chapters**, it is displayed with the Paragraph layout.
- **Both chapters and requirements**, the chapters are displayed with the Paragraph layout, but the requirements section can be switched between the Grid and Paragraph layouts as desired.

If an individual requirement is selected, it is displayed in the Form layout.

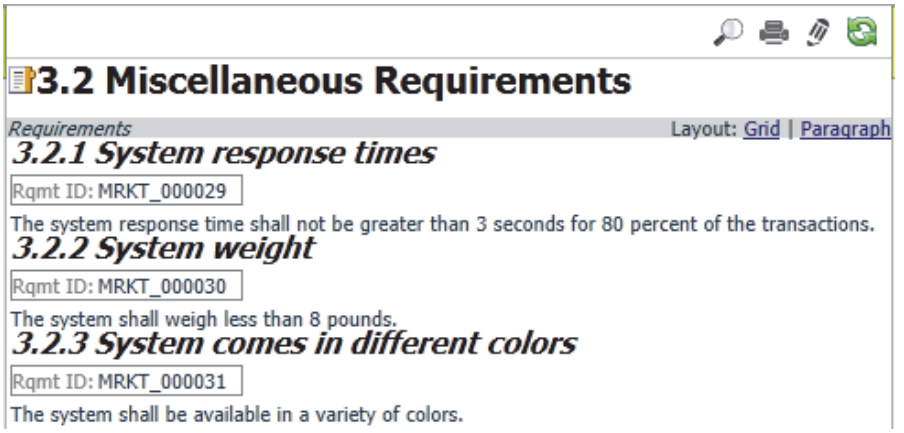
Grid Layout



This layout includes the following controls and features:

- **Find and replace:** This button invokes the Find and Replace in Document dialog so you can search the document or the selected chapter for a string. See "Finding and Replacing Character Strings" on page 108.
- **Print:** This button invokes your system's Print dialog to print the current contents of the Details pane. See "Printing from the Detail Pane" on page 87.
- **Edit:** This button invokes the Edit Chapter dialog or the Edit Document dialog, depending on what is currently selected in the Navigation pane. See "Editing a Chapter" on page 105 and "Editing Document Attributes" on page 94.
- **Refresh:** This button repopulates the Detail pane with fresh data from the database.
- **Sorting:** Click a column heading to sort by that attribute.
- To perform an action on a requirement listed in the Grid layout, select the requirement and then select the desired action from the Requirements group of the Actions pane.

Paragraph Layout

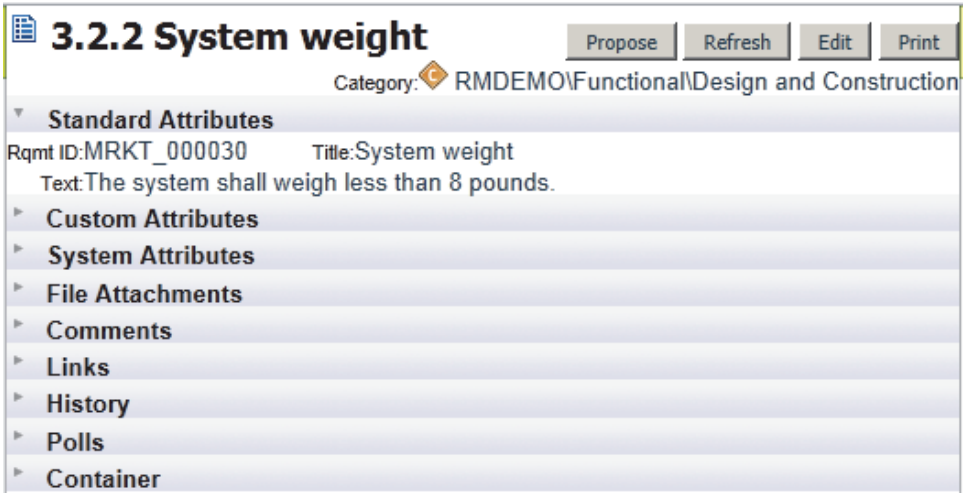


This layout includes the following controls and features:

- **Find and replace:** This button invokes the Find and Replace in Document dialog so you can search the document or the selected chapter for a string. See "Finding and Replacing Character Strings" on page 108.
- **Print:** This button invokes your system's Print dialog to print the current contents of the Details pane. See "Printing from the Detail Pane" on page 87.

- **Edit:** This button invokes the Edit Chapter dialog or the Edit Document dialog, depending on what is currently selected in the Navigation pane. See "Editing a Chapter" on page 105 and "Editing Document Attributes" on page 94.
- **Refresh:** This button repopulates the Detail pane with fresh data from the database.
- To perform an action on a requirement listed in the Paragraph layout, select the requirement and then select the desired action from the Requirements group of the Actions pane.

Form Layout



This layout includes the following controls and features:

- **Propose:** This button invokes the Submit a Change Request dialog so you can propose a change to the currently selected requirement. See "Submitting a Change Request" on page 73.
- **Refresh:** This button repopulates the Detail pane with fresh data from the database.
- **Edit:** This button invokes the Edit Requirements dialog. See "Editing a Requirement" on page 53.
- **Print:** This button invokes your system's Print dialog to print the current contents of the Details pane. See "Printing from the Detail Pane" on page 87.

NOTE The contents of the sections in the Form layout are printed only if the sections are expanded.

- To perform an action on the currently selected requirement, select the desired action from the Requirements group of the Actions pane.

Printing from the Detail Pane

You can print the contents of the Detail pane when you select a requirement, chapter, or document in the Navigation pane.

To print the contents of the Detail pane:

1 Click **Print** in the Detail pane. A window opens with content formatted for printing; the RM controls shown in this window are non-functional.

NOTE The contents of the sections in the Form layout are printed only if the sections are expanded.

2 Your system's Print dialog opens. Click **Print**. The requirement is sent to your printer.

3 After the content has printed, close the window that displayed the formatted content.

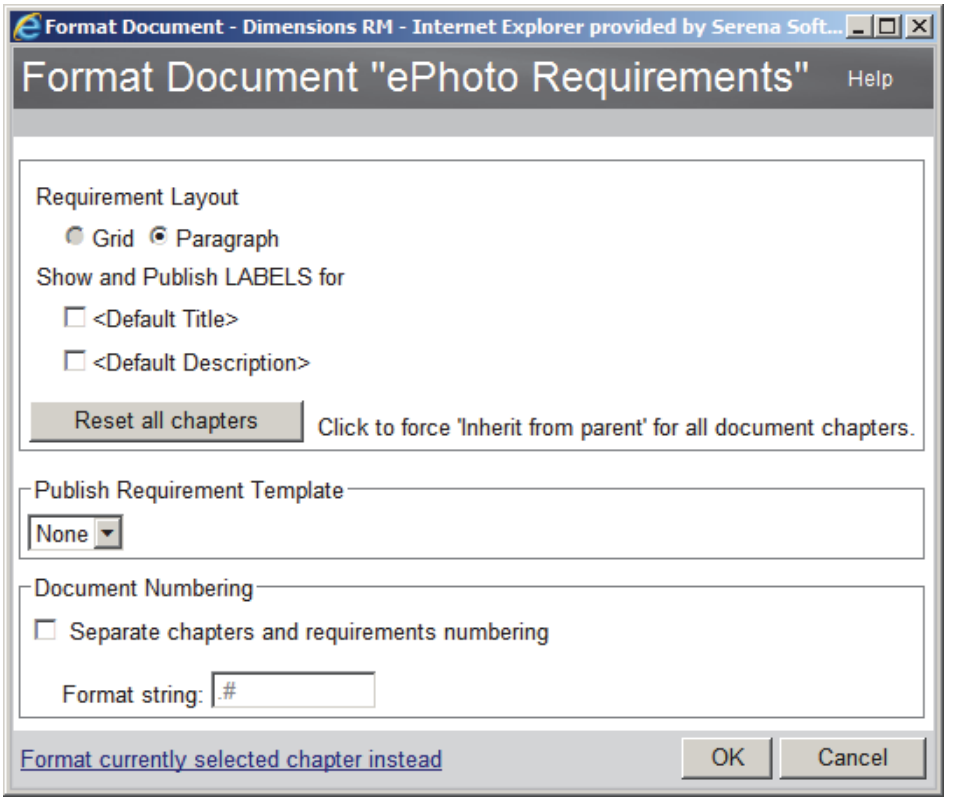
Formatting Documents

You can specify whether the document uses the Grid or Paragraph layout. If the document uses the Paragraph layout, you can select a custom template from which to publish the document. You can also number requirements separately from chapters and specify the character string that delineates the two.

To specify document format:

1 Select the root of the document in the Navigation pane.

2 Select **Format Document** from the Documents group of the Actions pane. The Format Document dialog opens.



TIP If you selected a chapter, or a requirement within a chapter, when you opened the Format Document dialog, a **Format currently selected chapter instead** link is displayed. If you wish to format only that chapter, click the link to open the Format Chapter dialog.

3 To change the **Requirement Layout**, select the **Grid** or **Paragraph** layout option.

NOTE If there is no chapter in a document or if there are mixed requirements from different classes in the same chapter, the Grid option is disabled.

4 To change which attribute labels are shown in the Detail pane and in the published document, select or deselect the checkboxes for **<Default Title>** and **<Default Description>**.

5 **Reset all chapters:** This button reverts the *Requirement Layout* and *Show and Publish LABELS for* settings of all chapters in the document to the default of inheriting the settings from their parents.

6 To use a custom template to publish the document, select a template from the **Publish Requirement Templates** list. This list contains templates that your administrator defined. If you select **None**, the standard grid or paragraph format is used.

NOTE To use a custom template, the requirement must be in a chapter that uses paragraph format. If it is in a chapter that uses grid format, the requirement is displayed in the standard grid format.

7 To change chapter numbering within the document, do the following:

a To **Separate chapters and requirements numbering**, select the checkbox. Else, any requirements located at the same level in the document as the top-level chapters will be counted as a chapter for numbering purposes. Adding or removing such a requirement would result in the renumbering of all chapters in the document.

b To define the **Format string** that will be used to display requirement numbers in the document, enter the desired format in this field. The string can be up to 10 characters long. The following characters have special meaning:

- The number (#) character represents the position of the requirement number. (The number character is known by many names around the world, including: pound, hash, and octothorp.)
- The caret (^) character serves as an escape symbol. You would use it in front of a # character if you wanted an # character to be displayed rather than representing the position of the requirement number.

The examples below assume two requirements located in a sub chapter numbered 2.1.1.

String	Example Results
.#	2.1.1.1 Mac Support 2.1.1.2 Deadline (This is the default.)
-#	2.1.1-1 Mac Support 2.1.1-2 Deadline
^##	2.1.1#1 Mac Support 2.1.1#2 Deadline
^^#	2.1.1^1 Mac Support 2.1.1^2 Deadline
RQ:#	2.1.1RQ:1 Mac Support 2.1.1RQ:2 Deadline
ReqNumber#	2.1.1ReqNumber1 Mac Support 2.1.1ReqNumber2 Deadline
	Mac Support Deadline **NOTE** There will be no requirement numbering displayed in the document, document tree, or the grid layout.

NOTE After changing the numbering settings and clicking **OK**, you will be prompted to make a snapshot of the document before the new settings are applied. If you do not wish to make a snapshot, just Cancel the snapshot dialog when it appears.

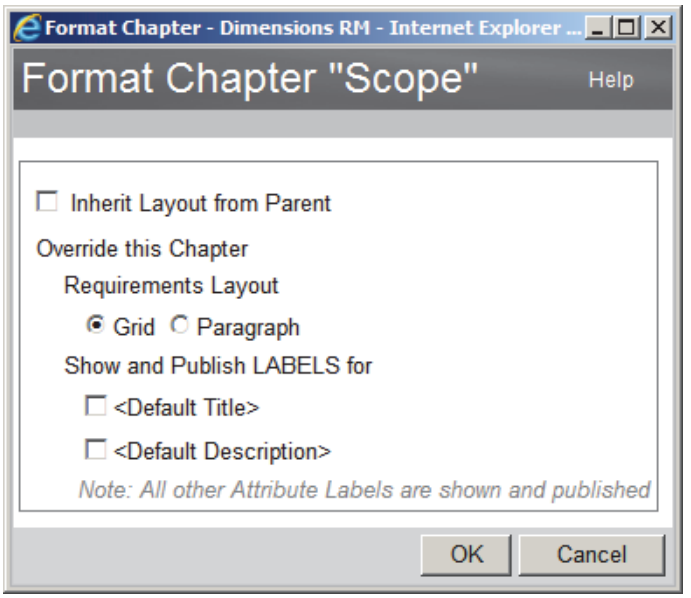
8 Click **OK**.

TIP Click the **Refresh** button to see changes to numbering take effect on the work page.

Formatting Chapters

To specify the layout you want for a chapter:

1 Click the **Format chapter** ( ) button. The **Format Chapter** dialog opens.



2 **Inherit Layout from Parent:** Selecting this checkbox reverts the *Requirement Layout* and *Show and Publish LABELS for* settings of the chapter to the default of inheriting the settings from its parent.

3 To change the **Requirement Layout**, select the **Grid** or **Paragraph** layout option.

NOTE If there are mixed requirements from different classes in the same chapter, the Grid option is disabled.

4 To change which attribute labels are shown in the Detail pane and in the published document, select or deselect the checkboxes for **<Default Title>** and **<Default Description>**.

5 Click **OK**.

Creating a New Document

When you create a new document, you can use one of the following as a template:

- The blank template.
- The chapter structure of an existing document.

- The chapter structure and requirements of an existing document.

NOTE

- You must have the "Create" permission for both the chapter class and for collections.
- If you select **Chapters Only** or **Chapters and Requirements** for the Create Options, you must also have the following additional permissions:
  - Chapter class: "Read"
  - Collections: "Link" and "Create Based on Existing Collection"

To create a new document:

1 Select **Document** from the New menu. The **New Document** dialog opens.

2 **Name**: Enter a name for the document.

NOTE A document name can contain a maximum of 256 characters and cannot include single quotes (').

3 **Description:** Enter a description of the document. This description will be shown in the Open Document dialog. The text may be truncated in the Description column of this dialog; however, it is shown in its entirety in the tooltip that appears when you hover your mouse over the description.

NOTE

- The description is not copied if you are creating a document from an existing document.
- The administrator specifies the maximum length of the **Description** field in the Chapter class in Class Definition.

4 **Publish Title:** Select to use the string in the **Name** field as the document's title when publishing to Word.

5 **Update To Current (Tip):** Select to automatically update the document with the newest version of each requirement.

NOTE To manually change the version of a specific requirement that is included in the document, see "Change which Requirement Version Is Included in a Document" on page 95.

6 **ECP Controlled:** Enable this checkbox if you want to require that users link the document to an ECP class object before editing it.

CAUTION! Once ECP Control is enabled on a document, **it cannot be disabled**.

NOTE

- ECPs are a high-level change management class type (Engineering Change Proposal) that can be used to collect multiple change requests into a single package.
- If ECP Control is in effect, but the current user has not assigned an ECP, the document will be Read-Only until he assigns an ECP to it. A notice to this effect will be displayed to the right of the Project Bread Crumb.
- To assign an ECP, see "Assigning an ECP to a Document" on page 107.

7 **Category**: Select the category to which to add the new document. A document can belong to any category to which you have access.

8 **Create Options**: Select one of the following:

- **Blank**: Creates the document from the blank template. When you select this option, the documents in the Template list are disabled. This is the default.
- **Chapters Only:** Creates the document based upon the chapter structure of an existing document that you select from the Template list.
- **Chapters and Requirements:** Creates the document based upon the chapter structure and requirements of an existing document that you select from the Template list.

9 **Template:** Select the document to use as the template. If needed, use the **Find template** field at the bottom of the dialog filter the documents shown in the list.

NOTE These controls are enabled only if you did **NOT** choose **Blank** from the Create Options.

10 **Foreword tab:** Click in the **Foreword** field. The HTML Toolbar appears. Enter any information that would precede the table of contents.

NOTE The **Foreword** tab is enabled only if you choose **Blank** from Create Options.

11 **System Attributes tab:** As needed, modify the system attributes for the document, such as the **Owner** and **Approval Status**.

12 Click **OK**.

Opening a Document to the Document Work Page

To open a document:

1 Display the Home page by clicking the root category in the project bread crumb:

2 Double-click the desired document in the Documents tab of the Selection pane. The Document work page opens.

Editing Document Attributes

These are the attributes from the General, Foreword, and System Attributes tabs of the New Document dialog.

To edit a document's attributes:

1 Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.

2 Click the **Edit** button at the top of the Detail pane. The Edit Document dialog opens.

3 Do any of the following as needed:

- **Name:** Edit the name of the document.
- **Description:** Edit the description of the document.
- **Publish Title:** Select to use the string in the Name field as the document title when publishing to Word.
- **Update To Current (Tip):** Select to automatically update the document with the newest version of each requirement.

NOTE To manually change the version of a specific requirement that is included in the document, see "Change which Requirement Version Is Included in a Document" on page 95.

- **ECP Controlled:** Enable this checkbox if you want to require that users link the document to an ECP class object before editing it.

CAUTION! Once ECP Control is enabled on a document, **it cannot be disabled**.

NOTE

- ECPs are a high-level change management class type (Engineering Change Proposal) that can be used to collect multiple change requests into a single package.
- If ECP Control is in effect, but the current user has not assigned an ECP, the document will be Read-Only until he assigns an ECP to it. A notice to this effect will be displayed to the right of the Project Bread Crumb.
- To assign an ECP, see "Assigning an ECP to a Document" on page 107.

- **Foreword:** Edit the foreword of the document.

TIP When you click in the field, formatting controls will appear.

- **Approval Status:** Select **approved** or **unapproved**.

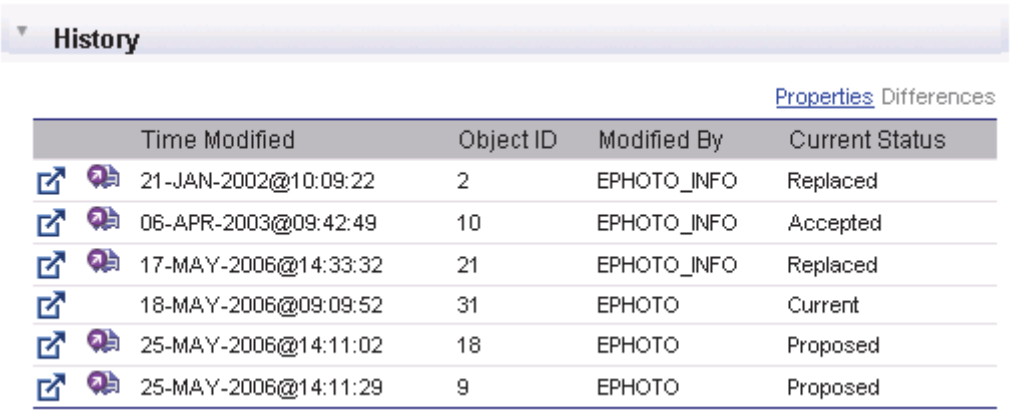
4 Click **OK**.

Change which Requirement Version Is Included in a Document

You can swap the version of a requirement currently in use in a document for another version of the requirement.

To change which requirement version is included in a document:

1. In the Navigation pane of the Document work page, select the requirement you wish to change.
2. Expand the **History** section of the requirement in the Detail pane.



   The version in use by the document will not have an Exchange ( ) icon (nor will rejected versions).
3. Click the Exchange ( ) icon of the version you want to use in the document. A dialog appears asking you to confirm this change.
4. Click **OK**.

Deleting a Document

To delete a document:

1. In the Navigation pane of the Document work page, select the root of the document.

NOTE The **Delete** command is only enabled if you have the "Remove" permission for both the Chapter class and for collections.

2. Click Delete in the Documents group of the Actions pane.
3. When prompted, confirm that you want to delete the document.

IMPORTANT! When you delete a document, the document and chapters are deleted, but the requirements are not deleted from the database.

Deleting a Requirement from a Document

To delete a requirement from a document:

1. In the Navigation pane of the Document work page, select the requirement you wish to remove from the document.
2. Click the **Delete** button. The **Delete from Document** dialog box opens.
3. If you also want to delete the requirement from the project, select the **Also delete from project** check box.
4. Click **Yes** to confirm that you want to delete the requirement.

Creating a Snapshot of a Document

A snapshot is a read-only copy of a document. It preserves the current state of the document for future reference. While creating a snapshot, you can also create a baseline of the requirement versions currently in the document.

NOTE

- When you create a snapshot of a document, the settings specified in the Properties dialog box are maintained.
- To create a snapshot, you must have the "Create Baseline" permission for collections.

To create a snapshot of a document:

1. Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.
2. Click **Create/View Snapshots** in the Documents group of the Actions pane. The Snapshots dialog opens.
3. Click the **New Snapshot** button. The New Snapshot dialog opens.
4. **Name:** Initially this field will contain the name of the original document. Modify it as needed.
5. **Description:** Initially this field will contain the description of the original document. Modify it as needed.
6. **Automatically create corresponding Baseline**: Enable this checkbox if you want to create a baseline of the requirement versions currently in the document.

NOTE The baseline creation process runs in the background and is likely still in progress after the snapshot creation process has completed. No notice will appear upon either completion or failure of the baseline creation process.

7. Click the **OK** button in the New Snapshot dialog.
8. Click the **Close** button in the Snapshots dialog.

View, Modify, or Delete a Snapshot

To view, modify, or delete a snapshot of a document:

1. Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.
2. Click **Create/View Snapshots** in the Documents group of the Actions pane. The Snapshots dialog opens.
3. Select the desired snapshot from the list.
4. Click one of the following buttons:
   - **Open:** The snapshot opens in the Document work page.
   - **Delete:** Click **OK** on the resulting confirmation dialog. The snapshot is deleted.
   - **Modify:** The Modify Snapshot dialog opens. Modify the **Name** and **Description** fields as needed, and click the **OK** button.

Comparing Documents and Snapshots

You can compare a document and one of its snapshots or compare two snapshots of the same document. The differences are flagged in the Navigation and Detail panes.

To compare documents and snapshots:

1. Open the document or snapshot to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.
2. Click **Compare Document** in the Documents group of the Actions pane. The Compare Snapshots dialog opens.
3. **Select document:** This field displays the name of the document, or the parent document of the snapshot, that was open when the dialog was invoked. If needed, click the Browse (...) button to select a different document.
4. **Select document versions to compare:** Do the following:
   a. Select the snapshot or document to use as the base of the comparison and click the **Set Base Document** arrow button to populate the **Base version** field.
   b. Select the snapshot or document that you want to compare to the base and click the **Set Changed Document** arrow button to populate the **Changed version** field.
5. Click the **Compare** button. The Compare Snapshots dialog closes.

   The Navigation pane of the Document work page now contains the union of all of the chapters in the two documents, and the detail pane contains a **Requirement Difference Summary**. See "Working with the Requirement Difference Summary" on page 98.

Working with the Requirement Difference Summary

The **Requirement Difference Summary** is a special chapter that is displayed before all other chapters in the Navigation pane. When this chapter is selected, the Detail pane contains five sections: **Added Requirements**, **Removed Requirements**, **Moved Requirements**, **Changed Requirements**, and **Unchanged Requirements**. Each section contains three columns: **Rqmt ID**, **Title**, and **Class**.

To work with the Requirement Difference Summary:

1 Click the **Requirement Difference Summary** node in the Navigation pane.

- Icons in the Navigation pane indicates if a given chapter or requirement was added, removed, moved, changed, or unchanged.
- At the chapter level, the change icons account only for the chapter description, not for the requirements in the chapter. Therefore, if a description of a chapter did not change, but subchapters or requirements in the chapter changed, the chapter icon indicates that the chapter is unchanged.
- If the title of a chapter or requirement is different in the two documents, both titles are displayed in the Navigation pane.
- When a chapter is selected in the Navigation pane, the Detail pane shows requirements in the grid view.

NOTE The attributes shown are those defined for display in the document. See "Specifying Document Properties" on page 102.

- Only those attributes that were selected in the **Properties** dialog box are shown.
- The icon that indicates whether the requirement was added, removed, moved, changed, or unchanged is also shown in the grid view.
- When you select a changed requirement in the Navigation pane:
  - The Detail pane shows the differences between the two versions.
  - For HTML-enabled text attributes, only the textual differences are shown in the Detail pane. The HTML tags are removed from the attribute and then the attributes are compared.
  - An icon is displayed next to the sections in the Detail pane that include changed attributes, and the sections that include changed attributes are expanded.
- The comparison is relative to the base version, especially for moved requirements (requirements that have been added and removed as a result of a drag-and-drop operation).

Publishing the Document Differences Report

The **Publish** command lets you publish a Microsoft Word document from the Document work page, as described in "Publishing Microsoft Word Documents" on page 99. However,

the Table of Contents will have **[ADDED]**, **[REMOVED]**, **[MOVED]**, **[CHANGED]**, or **[UNCHANGED]** appended to the end of each chapter title in the published document.

NOTE A Word document containing tables is created when you publish the document differences report. If you view this Word document in Print Layout, some of the tables are not visible. However, if you view this Word document in Normal layout, the entire document is visible.

Viewing a Snapshot or Document

You can view the individual snapshot or document from the "compare" version of the Document work page.

To view a snapshot or document from the "compare" version of Documents View:

- Click a document or snapshot link next to **Go to:** at the top of the Detail pane.

  The normal Document work page of the document or snapshot is displayed. Because snapshots are read-only, their chapters, subchapters, and requirements are dimmed in the Navigation pane.

Publishing Microsoft Word Documents

You can publish an RM document as a Microsoft Word file from the Document work page.

- The RM document name becomes the name of the Word file.
- The RM document name becomes the title of the Word document, unless you cleared the **Publish Title** check box in either the New Document or Edit Document dialog.
- The Navigation pane becomes the table of contents for the Word document.
- The content and layout in the Detail pane define the body of the Word document.

You can download or open the Word document after it is published.

NOTE

- The published Word document is not stored in the Dimensions RM database.
- You might receive a message that informs you that the file you are trying to open is in a different format than .doc. You can safely click **Yes** in this dialog box and the file will open in Word.

To publish to a Microsoft Word file:

1. Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.
2. Click **Publish** in the Documents group of the Actions pane.
3. The Publish Document dialog prompts whether you want to publish the document. Click **Yes**.

4 When prompted by your browser, click **Save** to save the file to your local system.

TIP Initially all links in the TOC will point to page number one. To correctly number the TOC entries, right-click in the TOC and select the update option.

NOTE An administrator can configure the system to print headers and footers in the published document and use custom styles for the published document. An administrator can also create custom templates that you can select for the published document.

To select an existing custom template, see "Formatting Documents" on page 88. To create a custom template, see Chapter 9, "Creating Templates to Publish Requirements" on page 169.

Viewing Attachments in the Published Document

If requirements in the document contain file attachment attributes, they can be included as links in the published Word document. To see the links, you must add the File Attachment attribute to the **Attributes to display** list in the **Properties of document** dialog box. For information about this dialog box, see "Specifying Document Properties" on page 102.

The links are displayed as icons. Double-click the icon in the published document to open the associated file.

NOTE

- Because the published document and the file attachments are stored in one document, the size of the document can be quite large. Its size depends on the number of requirements that have file attachments and the size of the file attachments.
- You can install Microsoft Word on your Dimensions RM Web server to publish attachments within your document, or you can choose to install it on other server. An administrator can configure the server if you do not want Word installed on the Web server. For more information, please see the *Serena Dimensions RM Administrator's Guide*.

The following illustration shows the file attachment links in the published document in grid layout.

3.1.3 Functional Requirements

#	Rqmt ID	Title	Text	File Attachment
3.1.3.1	MRKT_000001	EPhoto will be an online photo album	The ePhoto system will enable the user to browse an on-line photo album. It will look and feel like an electronic photo album, just like the one on the coffee table.	no file attached
3.1.3.1.1	MRKT_000024	Stored photo slideshows	The ePhoto system will provide the capability to create a slide shows of stored photos.	 prototype.gif
3.1.3.1.2	MRKT_000023	Displaying stored photo info	The ePhoto system will allow users to display any of the information stored with the photo.	 Acme Use Cases.xls

The following illustration shows the file attachment links in the published document in paragraph layout.

3.1.3 Functional Requirements

3.1.3.1 EPhoto will be an online photo album

Rqmt ID: MRKT_000001	**File Attachment**: no file attached

The ePhoto system will enable the user to browse an on-line photo album. It will look and feel like an electronic photo album, just like the one on the coffee table.

3.1.3.1.1 Stored photo slideshows

Rqmt ID: MRKT_000024	 prototype.gif **File Attachment**:

The ePhoto system will provide the capability to create a slide shows of stored photos.

3.1.3.1.2 Displaying stored photo info

Rqmt ID: MRKT_000023	 Acme Use Cases.xls **File Attachment**:

The ePhoto system will allow users to display any of the information stored with the photo.

Specifying Document Properties

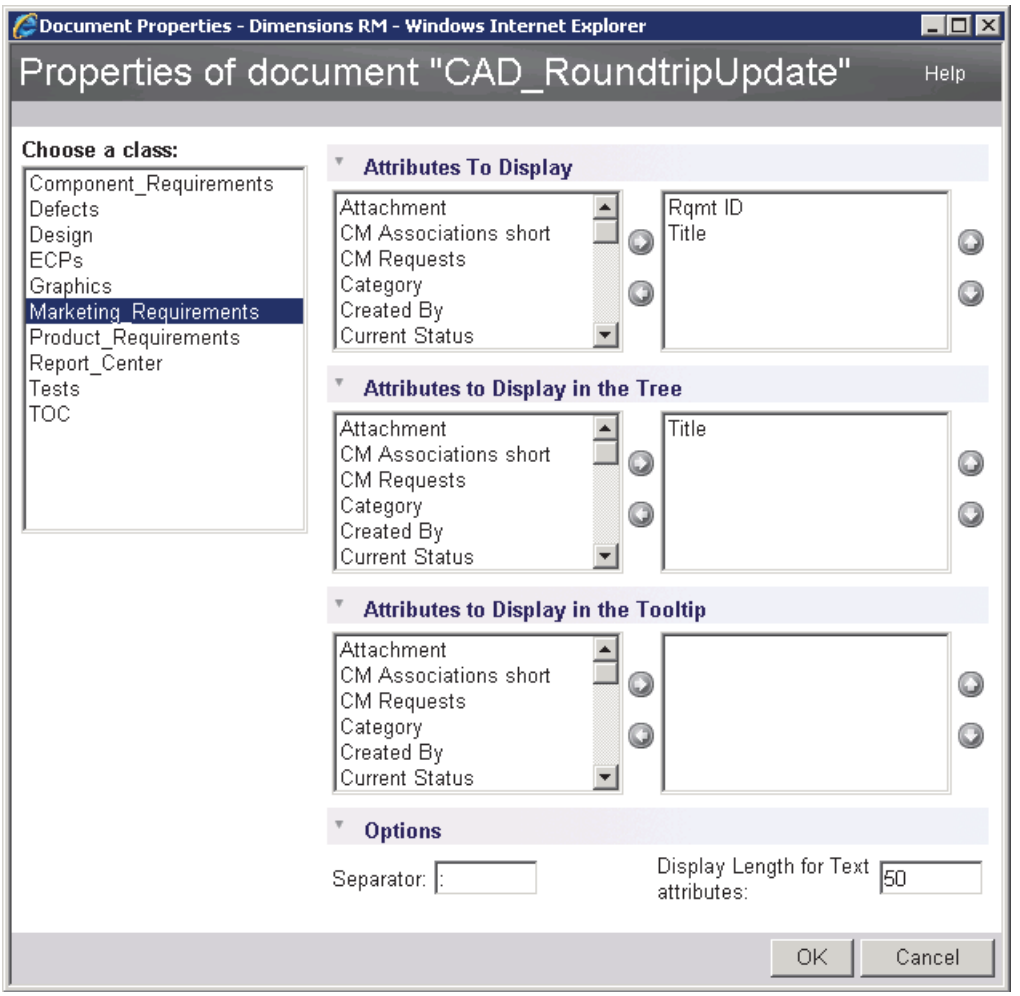
In the **Properties of Document** dialog box, you can specify which attributes are displayed for the requirements in a class.

NOTE These settings are specific to the current document. You must specify properties for each document individually.

To specify document properties:

1 Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.

2 Click **Edit Properties** in the Documents group of the Actions pane. The **Properties of document** dialog opens.



3 In the **Choose a class** list, select the class for which you want to specify properties.

4 To specify the attribute columns to display in the Details pane of the document:

a Select an attribute in the **Attributes To Display** list.

b Add attributes to the display list with the right arrow button; remove attributes with the left arrow button.

c Reorder the display of attributes with the up and down arrow buttons.

5 To specify the attributes to display in the Navigation pane of the document:

a Select an attribute in the **Attributes to Display in the Tree** list.

b Add attributes to the display list with the right arrow button; remove attributes with the left arrow button.

c Reorder the display of attributes with the up and down arrow buttons.

d Optionally, change the maximum **Display Length for Text attributes** for both the Navigation pane and tooltips. If the total length of the combined attribute string exceeds this limit, the string will be truncated and end in an ellipsis (...). The default is 50 characters.

6 To specify the attributes to display in the Navigation pane tooltips of the document:

a Select an attribute in the **Attributes to Display in the Tooltip** list.

b Add attributes to the display list with the right arrow button; remove attributes with the left arrow button.

c Reorder the display of attributes with the up and down arrow buttons.

d Optionally, specify a different **Separator** character to appear between attributes in Tooltips. The default is a colon (:).

e Optionally, change the maximum **Display Length for Text attributes** for both the Navigation pane and tooltips. If the total length of the combined attribute string exceeds this limit, the string will be truncated and end in an ellipsis (...). The default is 50 characters.

7 Click **OK**.

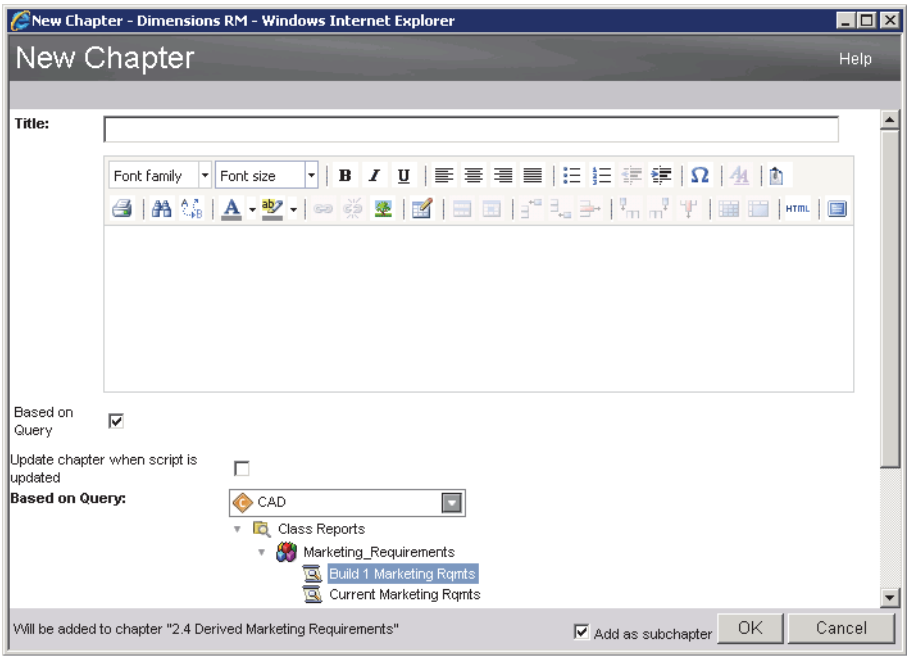
Creating a Chapter

You can create a chapter and then add individual requirements to it at a later time, or you can populate the chapter based on the requirements returned by a query. In the case of a query, it can be a one time operation or the chapter can be linked to the query and be updated along with it.

To create a chapter:

1 Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.

2 Click the **New Chapter** button in the Navigation pane. The **New Chapter** dialog opens.



3 In the **Title** field, type the name of the chapter.

4 Click in the box under the title. The HTML edit control is displayed. Type the description in the box.

5 To populate the content of the chapter based on a specific query, select the **Based on Query** option. You can then select the query to use as the basis of the chapter's content. This may be a class report, relationship report, or traceability report.

NOTE If the query returns multiple versions or non-current versions of a requirement, they will be included in the document. Prior to RM 11.2.2, only the Current version would be included.

6 Optionally choose the **Update chapter when script is updated** checkbox to dynamically refresh the content in the chapter when the query is updated.

NOTE

- If the query specifies requirement version by status (Current, Replaced, etc.), the version(s) included in the document will be updated to reflect whichever version of the requirement is assigned to the specified status.
- If the query specifies a specific object version number, that version of the requirement will remain in the document regardless of changes to its status.

7 If you selected a chapter when you clicked **Create**, the **Add as subchapter** check box is enabled. Select this check box if you want to add this chapter as a subchapter of the selected chapter.

8 Click **OK**.

Editing a Chapter

You can change the name and description of a chapter, and change it to populate its content based on a query.

To change the name and description of a chapter:

1. Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.
2. Select the chapter in the Navigation pane.
3. Click the **Edit** button in the Detail pane. The **New Chapter** dialog opens.
4. Edit the title and description as desired.

TIP For information on formatting text, see "HTML Text Formatting Toolbar" on page 21.

5. To populate the content of the chapter based on a specific query, select the **Based on Query** option. You can then select the query to use as the basis of the chapter's content. This may be a class report, relationship report, or traceability report.

NOTE If the query returns multiple versions or non-current versions of a requirement, they will be included in the document. Prior to RM 11.2.2, only the Current version would be included.

6. Optionally choose the **Update chapter when script is updated** checkbox to dynamically refresh the content in the chapter when the query is updated.

NOTE

- If the query specifies requirement version by status (Current, Replaced, etc.), the version(s) included in the document will be updated to reflect whichever version of the requirement is assigned to the specified status.
- If the query specifies a specific object version number, that version of the requirement will remain in the document regardless of changes to its status.

7. Click **OK**.

Deleting a Chapter

To remove a chapter:

1. Select the chapter in the navigation tree.
2. Click the **Delete** button.

3 When prompted, confirm that you want to remove the chapter.

NOTE

- The chapter and any sub chapters are deleted from the document.
- Any requirements in the selected chapter are removed from the document, but not from the RM database.
- The **Delete** command is enabled only if you have the "Remove" permission for the Chapter class.

Adding Requirements to a Document

To add a requirement, you search for existing requirements and then add them to a chapter or document. If a requirement is selected when you issue the **Add** command, you have the option of adding the requirements that are returned as subrequirements of the selected requirement.

To add requirements:

1 Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.

2 In the Navigation pane, select the chapter to which you want to add the requirements.

3 Click **Add to Chapter** in the Requirements group of the Actions pane. The Add to Chapter dialog opens.

4 Select a class in the **Look for class** list.

5 **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.

6 **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

7 Select the **Case sensitive search** check box if you want the search results to exactly match the capitalization of the specified attribute values.

8 **Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog.

9 **New Search:** Click this button to clear the current search criteria and results.

10 Select the desired requirements in the search results (Ctrl-click to multi-select, Shift-click to select a contiguous group).

NOTE

- A chapter icon is displayed next to a requirement if the requirement is in the chapter (including the root of the document) to which you are adding requirements.
- A document icon is displayed next to a requirement if the requirement is included in the document but is not in the chapter to which you are adding requirements.

11 **Add as subrequirement**: Select this checkbox if you want the requirements to be added as subrequirements of the requirement currently selected in the Navigation pane. This checkbox is available only if a requirement is selected in the Navigation pane.

12 Do any of the following:

- **Add:** Click this button to add the selected requirements to the document.
- **Remove:** Click this button to remove the selected requirements from the document.

TIP To manually change the version of a specific requirement that is included in the document, see "Change which Requirement Version Is Included in a Document" on page 95.

Assigning an ECP to a Document

ECPs are a high-level change management class type (Engineering Change Proposal) that can be used to collect multiple change requests into a single package.

If ECP Control is enabled on the document, the name of current ECP is displayed to the right of the Project Bread Crumb.

If ECP Control is in effect, but the current user has not assigned an ECP, the document will be Read-Only until he assigns an ECP to it. Instead of the name of an ECP, you will see this message: **(No ECP, document is read-only)**.

NOTE To enable ECP Control on a document, see "Editing Document Attributes" on page 94.

To assign an ECP:

1 Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.

2 Click **Assign ECP** in the Documents group of the Actions pane. The Assign ECP dialog opens.

3 Select **ECPs** in the **Look for class** list.

4 **Constraints:** As needed, specify criteria to locate the desired ECP. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.

5 **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

6 Select the **Case sensitive search** check box if you want the search results to exactly match the capitalization of the specified attribute values.

7 **Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog.

8 **New Search:** Click this button to clear the current search criteria and results.

9 Select the desired ECP in the search results.

10 Do any of the following:

- **Assign:** Click this button to assign the selected ECP to the document.
- **Clear:** Click this button to remove the selected ECP from the document.

Finding and Replacing Character Strings

You can find and replace character strings in chapters and requirements in an open document. You can find and replace character strings in the following:

- An entire document or a selected chapter
- Title and Description attributes or all alphanumeric attributes

NOTE

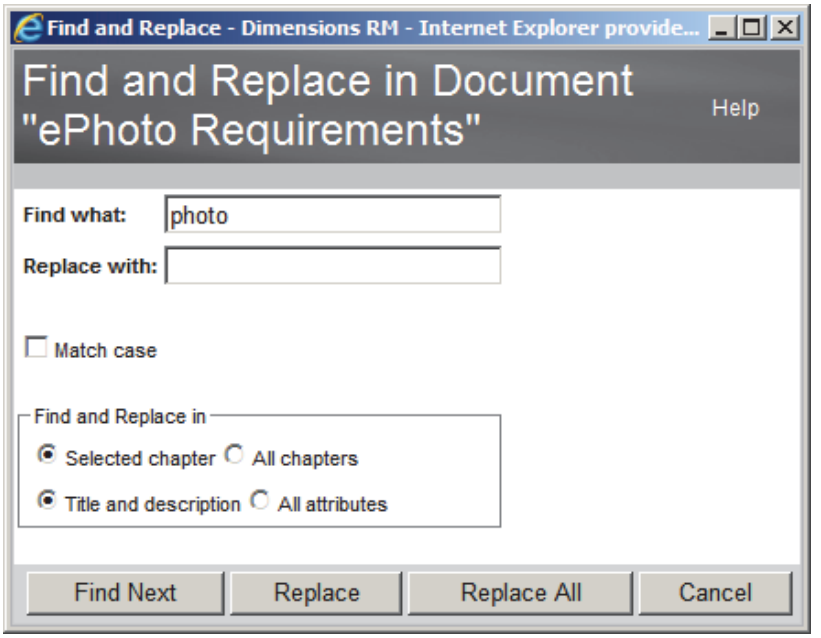
- The **Find and Replace** menu item is disabled while you are comparing a document and its snapshot (see "Comparing Documents and Snapshots" on page 97).
- For read-only objects (snapshots and ECP-controlled documents without an ECP assigned), the **Replace** and **Replace All** buttons are not shown. With these objects, you only Search feature of the dialog works.
- To use the **Replace** and **Replace All** commands, you must have permission to replace a requirement or chapter. If only some attributes can be changed, they are changed, and you receive a message saying that you do not have permission to replace the string in all attributes.

To find and replace character strings:

1 Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.

2 If you wish to search within a specific chapter, select it in the Navigation pane.

3 Click the **Find and replace** ( ) button. The Find and Replace dialog opens.



4 **Find what:** Enter the string you want to find.

5 **Replace with:** If you want to replace the string, enter the replacement string here.

6 **Match case:** Enable this checkbox to include the case of the string in the match criteria.

7 Select one of the following:

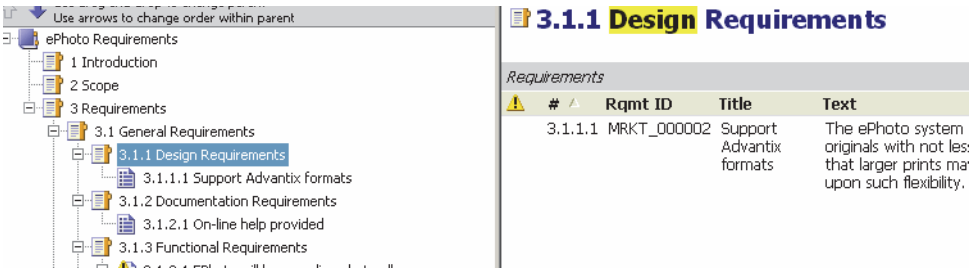
- **Selected chapter:** To search only the selected chapter and any subchapters and requirements it contains.
- **All chapters:** To search all chapters and their contents.

8 Select one of the following:

- **Title and description:** To search only Title and Description attributes.
- **All attributes:** To search all alphanumeric attributes, except implicit attributes.

9 Click any of the following buttons:

- **Find Next:** This button to displays the first chapter or requirement containing one or more instances of the string. The chapter or requirement is selected in the Navigation pane, and the found string is highlighted in the Detail pane. To display the next match, click the button again.



- **Replace**: The chapter or requirement that is currently selected is replaced, and the new version contains the string you specified in the **Replace with** box.
- **Replace All:** This button replaces all chapters and requirements containing the string you specified in the **Find what** field with the string you specified in the **Replace with** field.

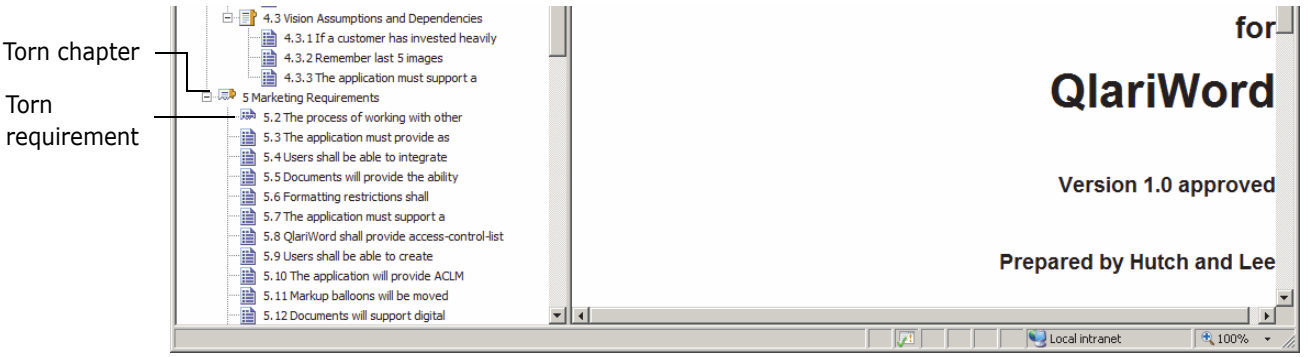
  The Find and Replace dialog closes, and a "Replacing all strings" message is displayed. After this operation finishes, a dialog displays how many chapters and requirements were replaced and reports any errors.

Working with Limited Permissions

If you navigate to a Document work page and one or more of the requirements in the chapter belongs to a class to which you do not have "read" permission, or if one or more requirements belong to a category to which you do not have permission, the following occurs:

- The chapter or requirement icon is displayed as being torn.
  - A torn chapter icon means that the user does not have permission to read one or more requirements within that chapter.
  - A torn requirement icon means that the user does not have permission to read one or more subrequirements under that requirement.
- A message informs you that not all requirements in the document are displayed due to permissions issues.

The following illustration shows this scenario.



Merging Document Changes

The configuration is set through the **Project Settings** dialog, which is available to administrators. For more information, see the *Serena Dimensions RM Administrator's Guide*.

NOTE RM Browser can be configured to use locking or merging to handle the situation where multiple users edit a requirement or chapter at the same time. This section describes document merging (the "root chapter" of a document is the document itself).

If RM Browser is configured to use merging, document changes must be merged when two users edit the same document at the same time.

Changes can be *automatic* or *conflicting*, as described in the following table.

Change Type	Description
Automatic	When the change made by the first user is the same as the change made by the second user or when the change made by the first user is distinct from any change made by the second user, automatic merging can occur because a review of the change is not strictly necessary. However, it is recommended that the second user review the change made by the first user before accepting it.
Conflicting	When the change the second user makes conflicts with the change the first user made, the second user must review the changes and do one of the following: ■ Accept the change the second user made ■ Accept the change the first user made ■ Accept the original value ■ Combine the changes manually by editing the value directly in the main part of the dialog

The following scenario summarizes the actions that lead to document merging.

1 Two users edit the same document at the same time.

2 The first user clicks **OK** in the **Edit Document** dialog. The **Edit Document** dialog closes.

3 The second user clicks **OK** in the **Edit Document** dialog.

4 The second user is notified that the first user made one or more changes to the document. The notification either tells the second user that the merge can be done automatically (because the change the first user made does not conflict with the change the second user made) or that the changes conflict and must be resolved before the second user can replace the document.

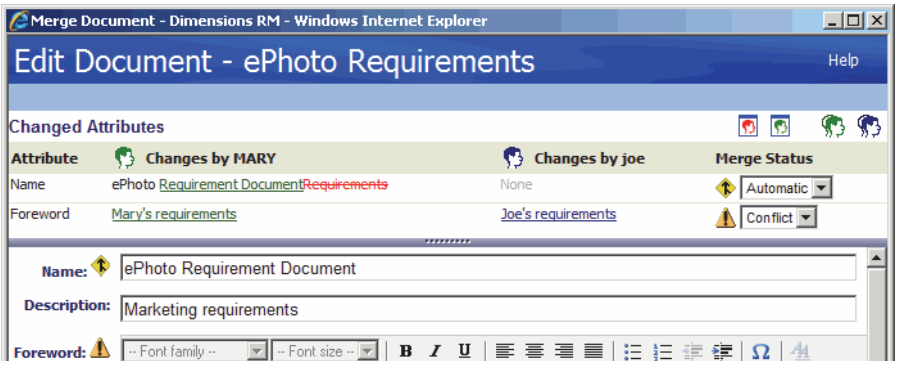
5 The second user clicks **OK** on the notification message. The **Edit Document** dialog becomes the **Merge Document** dialog. The **Merge Document** dialog box differs from the **Edit Document** dialog in that the **Merge Document** dialog:

- Has a section at the top that summarizes the changes and provides a user interface for merging the changes
- Has visual indications next to its attributes that identify the type of merge that the second user selected

6 The second user uses the merge section at the top of the **Merge Document** dialog to resolve the changes as described in "Viewing Prior Versions of the Document" on page 112 and "Merging Changes" on page 112.

Merge Status

The merge status of the changes made by Mary and Joe are highlighted in the **Changed Attributes** section at the top of the **Merge Document** dialog box.



Mary made the first change when she changed "Requirements" to "Requirement Document" in the *Name* attribute. In the **Merge Status** column, **Automatic** is selected in the list, because the change does not involve a conflict with a change that Joe made. The icon that represents an automatic merge is a diamond shape with a merge arrow in it and is displayed to the left of the **Merge Status** list and to the left of the *Name* attribute box in the main part of the dialog box.

The second change involves a conflict. In the second change, Mary changed the Foreword to "Mary's requirements" but Joe changed this attribute value to "Joe's requirements." In the **Merge Status** column, **Conflict** is selected in the list. The icon that represents a conflict is a triangle with an exclamation point in it and is displayed to the left of the **Merge Status** list and to the left of the *Foreword* attribute in the main part of the dialog.

Viewing Prior Versions of the Document

It can be useful to view prior versions of the document before you resolve changes.

The second user can view the original version of the document by clicking the **View original version of the document** button or by clicking **Original** in the appropriate **Merge Status** column list.

The second user can view the document in the state it was in after the first user made changes but before the second user made changes by clicking the **New version of document prior to your changes** button .

Merging Changes

After the second user has decided how to resolve the changes, he or she can merge them.

To merge changes:

1 If **Automatic** is selected in the **Merge Status** column list, perform one of the following steps:

- Retain the **Automatic** selection to accept the change.
- Select the name of the user who made the change to accept the change.
- Select **Original** to restore the attribute to its original value.

2 If **Conflict** is selected in the **Merge Status** column list box, perform one of the following steps:

- Select the name of the user whose change you want to accept.
- Select **Original** to restore the attribute to its original value.
- Edit the value manually in the main form so that it matches the value you want to accept.

3 If you want to accept all changes made by particular user (for example, Mary or Joe), click the **Accept all changes by Mary** button or the **Accept all changes by Joe** button .

4 Click **OK**.

Merging Chapter Changes

The configuration is set through the **Project Settings** dialog box, which is available to administrators. For more information, see the *Serena Dimensions RM Administrator's Guide*.

NOTE RM Browser can be configured to use locking or merging to handle the situation where multiple users edit a requirement or chapter at the same time. This section describes chapter merging.

If RM Browser is configured to use merging, chapter changes must be merged when two users edit the same chapter at the same time.

Changes can be *automatic* or *conflicting*, as described in the following table.

Change Type	Description
Automatic	When the change made by the first user is the same as the change made by the second user or when the change made by the first user is distinct from any change made by the second user, automatic merging can occur because a review of the change is not strictly necessary. However, it is recommended that the second user review the change made by the first user before accepting it.
Conflicting	When the change the second user makes conflicts with the change the first user made, the second user must review the changes and do one of the following: ■ Accept the change the second user made ■ Accept the change the first user made ■ Accept the original value ■ Combine the changes manually by editing the value directly in the main part of the dialog box.

The following scenario summarizes the actions that lead to chapter merging.

1 Two users edit the same chapter at the same time.

2 The first user clicks **OK** in the **Edit Chapter** dialog.

3 The second user clicks **OK** in the **Edit Chapter** dialog.

4 The second user is notified that the first user made one or more changes to the chapter. The notification either tells the second user that the merge can be done automatically (because the change the first user made does not conflict with the change the second user made) or that the changes conflict and must be resolved before the second user can replace the chapter.

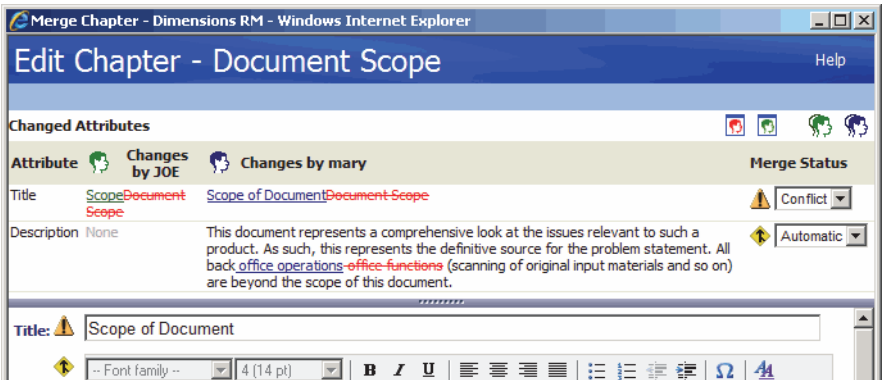
5 The second user clicks **OK** on the notification message. The **Edit Chapter** dialog becomes the Merge Chapter dialog. The **Merge Chapter** dialog differs from the **Edit Chapter** dialog in that the **Merge Chapter** dialog:

- Has a section at the top that summarizes the changes and provides a user interface for merging the changes
- Has visual indications next to its attributes that identify the type of merge that the second user selected

6 The second user users the merge section at the top of the **Merge Chapter** dialog to resolve the changes as described in "Viewing Prior Versions of the Chapter" on page 114 and "Merging Changes" on page 115.

Merge Status

The merge status of the changes made by Joe and Mary are highlighted in the **Changed Attributes** section at the top of the **Merge Chapter** dialog.



Joe made the first change when he changed the *Title* attribute from "Document Scope" to "Scope." This change involves a conflict, because Mary changed the *Title* attribute from "Document Scope" to "Scope of Document." In the **Merge Status** column, **Conflict** is selected in the list. The icon that represents a conflict is a triangle with an exclamation point in it and is displayed to the left of the **Merge Status** list and to the left of the box in the main part of the dialog.

Mary made the second change when she changed "office functions" to "office operations." In the **Merge Status** column, **Automatic** is selected in the list, because the change does not involve a conflict with a change that Joe made. The icon that represents an automatic merge is a diamond shape with a merge arrow in it and is displayed to the left of the **Merge Status** list and the box in the main part of the dialog.

Viewing Prior Versions of the Chapter

It can be useful to view prior versions of the chapter before you resolve changes.

- The second user can view the original version of the chapter by clicking the **View original version of the chapter** button or by clicking **Original** in the appropriate **Merge Status** column list.
- The second user can view the chapter in the state it was in after the first user made changes but before the second user made changes by clicking the **New version of chapter prior to your changes** button .

Merging Changes

After the second user has decided how to resolve the changes, he or she can merge them.

To merge changes:

1 If **Automatic** is selected in the **Merge Status** column list box, perform one of the following steps:

- Retain the **Automatic** selection to accept the change.
- Select the name of the user who made the change to accept the change.
- Select **Original** to restore the attribute to its original value.

2 If **Conflict** is selected in the **Merge Status** column list box, perform one of the following steps:

- Select the name of the user whose change you want to accept.
- Select **Original** to restore the attribute to its original value.
- Edit the value manually in the main form so that it matches the value you want to accept.

3 If you want to accept all changes made by a particular user (for example, Joe or Mary), click the **Accept all changes by Joe** button or the **Accept all changes by Mary** button .

4 Click **OK**.

Copying a Document's URL to the Windows Clipboard

You can copy the URL of a document or snapshot and paste it into a file for future use and reference. When that URL is later invoked, it will open RM Browser to that document or snapshot. See the appropriate section below.

Copying the URL of a Document

To copy the URL of a document:

1 Select the desired document in the Documents tab of the Home page.

2 Click Create direct URL in the Documents group of the Actions pane. A dialog opens with the URL selected.

3 Press `Ctrl + C`, or right-click on the highlighted URL and select **Copy**. The URL is now on the Windows clipboard.

4 Click **OK** to dismiss the dialog.

5 Use `Ctrl + V`, or the relevant application-specific menu command, to paste the URL into the file or application where you wish to use it.

Copying the URL of a Snapshot

To copy the URL of a snapshot

1 Open the document to the Document work page, if it is not already open. See "Opening a Document to the Document Work Page" on page 93.

2 Click **Create/View Snapshots** in the Documents group of the Actions pane. The Snapshots dialog opens.

3 Right-click the link  icon next to the desired snapshot.

4 Select **Copy Shortcut** (or a similar menu item, depending upon the browser you are using).

The URL is now on the Windows clipboard. You can now paste it into the file or application where you wish to use it.

Chapter 5

Working with Reports

Running Reports

To run a report:

1. Double-click the desired report in the Reports tab of the Home page.
2. If the script has prompts, enter the information that is requested.
3. Click the **Run Query** button.

Editing a Report

To edit a report:

1. Double-click the desired report in the Reports tab of the Home page.
2. Click **Edit** in the Reports group of the Actions pane. The **Query By *ReportType*** or **Query By Script** dialog opens. The former is the wizard version of the dialog and is the default; the latter allows direct editing of the SQL-like script, and opens if the script cannot be edited with the wizard.
3. If you want to save the query:
   a. Enter a name in the **Query Name** box. The **Run** button changes to **Run and Save**.
   b. Select **Filter** or **Script** to identify the query type.

NOTE

- A filter includes only one class. A script includes one or more classes.
- If you want to include the query on your My Work page, save the query as a script, even if it contains only one class. You can create a query if you do not have Create permission for scripts, but you cannot save it.

   c. Type a description of the query in the **Query Description** box. The maximum number of characters is 1024.
   d. In the **Category** list, select the category in which the query will be saved.
4. As needed, modify the fields specific to the type of report you are editing:
   - **Class Report - Class:** Select the desired class from the list.

NOTE If a requirement of a class was selected when you invoked the dialog, then a class is already selected.

   - **Relationship Report - Relationship:** Select the relationship you want to report on.

- **Relationship Report - Report Type tab:** Select a report type:

Report Type	Description
Full (compliance and non-compliance)	The report lists all requirements in the primary and secondary class, whether or not they are linked to each other.
Compliance only	The report lists either: ■ All matching requirements in the primary class that have links to matching requirements in the secondary class ■ All matching requirements in the secondary class that have links to matching requirements in the primary class
Non-Compliance only	The reports lists either: ■ All matching requirements in the primary class that have no links to matching requirements in the secondary class ■ All matching requirements in the secondary class that have no links to matching requirements in the primary class

A sample of the selected report type is displayed on the right side of the dialog.

- **Traceability Report - Top-level class:** Select the root class for the report.
- **Traceability Report - Related Classes to Display tab:**
  - Select the check boxes next to the classes to specify the relationships that should be displayed in the traceability report.

NOTE

- The check box next to the top-level class is always selected and disabled.
- To avoid cyclic dependencies, the check boxes next to relationships that are already used are also selected and disabled.
- You do not have to select consecutive classes.

  - **"Current" requirements only**: Select this check box if you want the traceability report to include only requirements that have a status of "Current".

5 **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.

6 **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

7 **View Script / View Wizard:** Click to toggle between the Wizard and Script views of the dialog.

NOTE The tabs are visible only in the Wizard view.

8 Do any of the following:

- **Preview:** Click this button to run the report without saving the report or closing the dialog.
- **Run:** Click this button to run the report and close the dialog without saving the report.
- **Save As and Run:** Click this button to run and save the report. The dialog will close.

Creating a Class Report

Complete these steps to create a class report.

CAUTION! If you do not have "read" permission in a category, the requirements in that category are not returned in the query results, even if they satisfy the query requirements.

To create a class report:

1 Select **Class Report** from the New menu. The Query By Class dialog opens.

2 **Class:** Select the desired class from the list.

NOTE If a requirement of a class was selected when you invoked the dialog, then a class is already selected.

3 If you want to save the query:

a Enter a name in the **Query Name** box. The **Run** button changes to **Run and Save**.

b Select **Filter** or **Script** to identify the query type.

NOTE

- A filter includes only one class. A script includes one or more classes.
- If you want to include the query on your My Work page, save the query as a script, even if it contains only one class. You can create a query if you do not have Create permission for scripts, but you cannot save it.

c Type a description of the query in the **Query Description** box. The maximum number of characters is 1024.

d In the **Category** list, select the category in which the query will be saved.

4 **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.

5 **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

6 **View Script / View Wizard:** Click to toggle between the Wizard and Script views of the dialog.

NOTE The tabs are visible only in the Wizard view.

7 Do any of the following:

- **Preview:** Click this button to run the report without saving the report or closing the dialog.
- **Run:** Click this button to run the report and close the dialog without saving the report.
- **Save As and Run:** Click this button to run and save the report. The dialog will close.

Creating a Relationship Report

Complete these steps to create a relationship report.

NOTES You can create a report if you do not have Create permission for scripts, but you cannot save it.

CAUTION! If you do not have the "read" permission in a category, the requirements in that category are not returned in the report results, even though they satisfy the report requirements.

To create a relationship report:

1 Select **Relationship Report** from the New menu. The Query By Relationship dialog opens.

2 **Relationship:** Select the relationship you want to report on.

3 If you want to save the query:

a Enter a name in the **Query Name** box. The **Run** button changes to **Run and Save**.

b Type a description of the query in the **Query Description** box. The maximum number of characters is 1024.

c In the **Category** list, select the category in which the query will be saved.

4 **Report Type tab:** Select a report type:

Report Type	Description
Full (compliance and non-compliance)	The report lists all requirements in the primary and secondary class, whether or not they are linked to each other.
Compliance only	The report lists either: ■ All matching requirements in the primary class that have links to matching requirements in the secondary class ■ All matching requirements in the secondary class that have links to matching requirements in the primary class
Non-Compliance only	The reports lists either: ■ All matching requirements in the primary class that have no links to matching requirements in the secondary class ■ All matching requirements in the secondary class that have no links to matching requirements in the primary class

A sample of the selected report type is displayed on the right side of the dialog.

5 **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.

6 **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

7 **View Script / View Wizard:** Click to toggle between the Wizard and Script views of the dialog.

NOTE The tabs are visible only in the Wizard view.

8 Do any of the following:

- **Preview:** Click this button to run the report without saving the report or closing the dialog.
- **Run:** Click this button to run the report and close the dialog without saving the report.
- **Save As and Run:** Click this button to run and save the report. The dialog will close.

Creating a Traceability Report

Complete these steps to create a Traceability Report.

NOTE Permissions for traceability reports are treated the same way as permissions for scripts. If you do not have permission to create a script on the project level, then you will be unable to create a traceability report. If you do not have permission to read a script on a project level, then you will be unable to open a traceability report, unless you created the report. In RM Explorer, you can assign specific permissions to individual traceability reports.

1. Select **Traceability Report** from the New menu. The New Traceability Report dialog opens.
2. **Top-level class:** Select the root class for the report.
3. If you want to save the query:
   - **a** Enter a name in the **Name** box. The **Run** button changes to **Run and Save**.
   - **b** Type a description of the query in the **Description** box. The maximum number of characters is 1024.
   - **c** In the **Category** list, select the category in which the query will be saved.
4. **Related Classes to Display tab:**
   - Select the check boxes next to the classes to specify the relationships that should be displayed in the traceability report.

NOTE

- The check box next to the top-level class is always selected and disabled.
- To avoid cyclic dependencies, the check boxes next to relationships that are already used are also selected and disabled.
- You do not have to select consecutive classes.

   - **"Current" requirements only**: Select this check box if you want the traceability report to include only requirements that have a status of "Current".
5. **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.
6. **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.
7. **View Script / View Wizard:** Click to toggle between the Wizard and Script views of the dialog.

NOTE The tabs are visible only in the Wizard view.

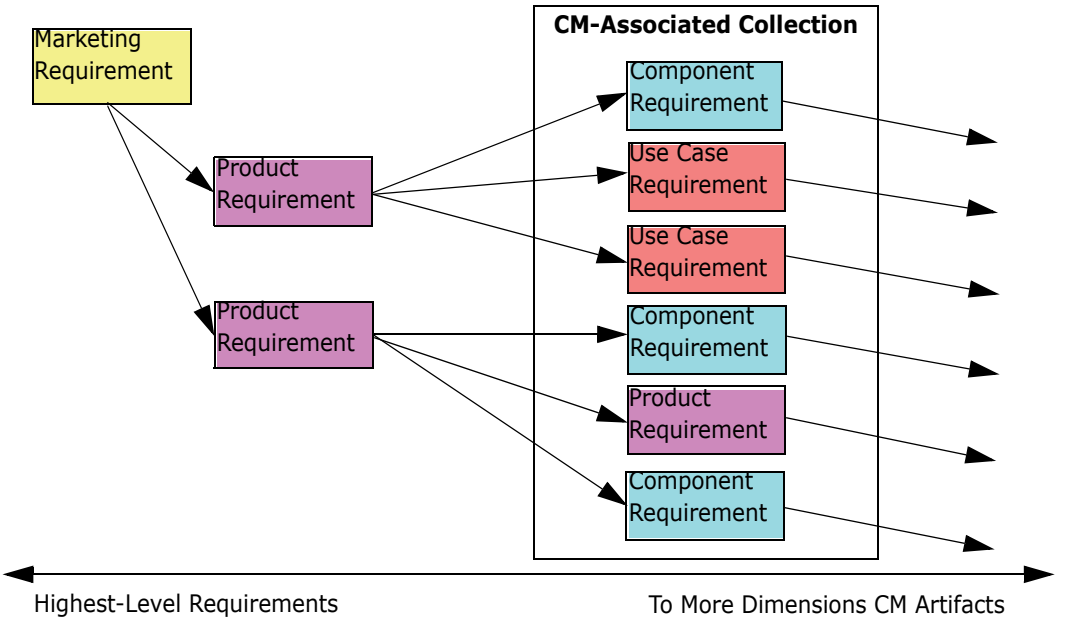
8 Do any of the following:

- **Preview:** Click this button to run the report without saving the report or closing the dialog.
- **Run:** Click this button to run the report and close the dialog without saving the report.
- **Save As and Run:** Click this button to run and save the report. The dialog will close.

Working in the Traceability Work Page

Traceability is a way to analyze the linkages between requirements. It provides a way to select the relationships you want to trace, browse through the requirements that are part of the relationships, and then print traceability reports that display the information in a visual format that is easy to analyze.

Requirements in collections that are associated with Dimensions CM projects can be included in traceability reports. The following diagram illustrates such traceability.



The Traceability work page consists of a two panes: the left pane is the traceability tree with a top-level class from which related classes and requirements flow in a hierarchical format. The right pane displays information based on what you selected in the traceability tree.

NOTE Permissions for traceability reports are treated the same way as permissions for scripts. If you do not have permission to create a script on the project level, then you will be unable to create a traceability report. If you do not have permission to read a script on a project level, then you will be unable to open a traceability report, unless you created the report. In RM Explorer, you can assign specific permissions to individual traceability reports.

The Traceability work page includes the components described in the following table.

Component	Description
Traceability Tree	Contains a hierarchical presentation of requirements that belong to classes you selected when creating the traceability report. For more information about the traceability tree, see "Understanding the Traceability Tree" on page 125.
Detail Pane	Shows the List view of the selected requirement, or the name and description of the selected report.

Understanding the Traceability Tree

Note the following points about the traceability tree:

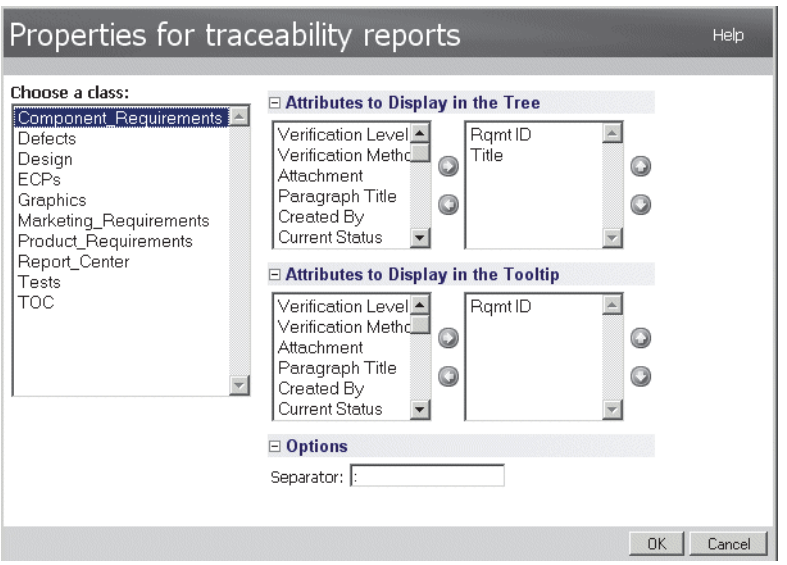
- If you hover over a class that is not the top-level class, a tool tip displays the name of the relationship between that class and its parent class.
- Class labels show the relationship in parentheses if there is more than one label with the same class name but a different relationship.
- If you hover over a requirement, by default, a tool tip displays class and requirement ID of the requirement. You can add attributes that are displayed in the tool tip. For more information, see "Customizing the Traceability Tree" on page 126.
- You can configure which attributes that you want to see in the traceability tree for each requirement. By default, the PUID and title of the requirement are displayed. For more information, see "Customizing the Traceability Tree" on page 126.
- If you double-click a requirement, the **Edit Attributes** dialog box opens. However, if you double-click in an attribute in the requirements details in the right pane, you can edit the requirement content directly in place.
- A Dimensions CM indicator is displayed next to each requirement in a collection that is associated with a Dimensions CM project. If a parent requirement is collapsed, and it has child requirements that are related to Dimensions CM, this indicator is shown on the parent requirement, even if the parent requirement itself is not related to Dimensions CM. When you expand the parent requirement, the indicator is shown on the child requirement, but is removed from the parent requirement.
- A suspect link indicator is displayed next to each requirement that has suspect links. This indicator is informational only; clicking it does not remove the suspect status from the links.
- You can use the drag-and-drop operation to change parents within the tree. You can only change to a parent that has the same class and same path as the original parent. Be sure to drop the requirement on the new parent, not on a child requirement of the new parent.
- You can press the CTRL key and use the drag-and-drop operation to copy a requirement to another parent.
- To reload the tree, click the refresh icon at the top right of the tree.
- If the report was created in release 10.1.2.0 or earlier, a warning is displayed at the top of the tree informing you that changes you made in the **Traceability Properties** dialog box do not take effect until you save the report again.

Customizing the Traceability Tree

By default, the only attributes that are displayed in the traceability tree are the requirement PUID and title. You can configure the attributes that are displayed in the traceability tree for each class and for each project. For example, it might be useful to see the associated TeamTrack issue number, owner, and status. You can also configure tooltips to display attributes such as the requirement title instead of using space in the traceability tree to display this information.

To customize the traceability tree:

1 Click the **Report Properties** button. The **Properties for traceability reports** dialog box opens.



NOTE If the report was created in release 10.1.2.0 or earlier, a warning is displayed at the top of the dialog box that tells you that you need to save the report again before changes take effect.

2 Initially, the **Choose a class** list is the only field that is displayed. Select a class in the **Choose a class** list.

3 In the **Attributes to Display in the Tree** list on the left, select the attributes you want to display in the traceability tree and click the right arrow.

4 In the **Attributes to Display in the Tree** list on the right, select the attributes you want to remove from the traceability tree and click the left arrow.

5 Use the up and down arrows next to the list on the right to sort the order of the attributes.

6 In the **Attributes to Display in the Tooltip** list on the left, select the attributes you want to display in the tooltip that is displayed when you hover your mouse over the requirement item in the traceability tree and click the right arrow.

7 In the **Attributes to Display in the Tooltip** list on the right, select the attributes you want to remove from the tooltip and click the left arrow.

8 Use the up and down arrows next to the list on the right to sort the order of the attributes.

9 In the **Separator** box, type the character you want to separate the attributes in the traceability tree and in the tooltips. The default character is a colon (:).

Moving and Copying Reports to a Different Category

You can move, or save a copy of, a report to another category.

To move/copy a report to another category:

1 Double-click the desired report in the Reports tab of the Home page. The report opens in a work page.

2 Click **Edit** in the Reports group of the Actions pane. An edit dialog opens.

3 **Category:** Select the desired category.

4 Do one of the following:

- To save a *copy* of the report to the selected category, modify the **Name** of the report and click the **Save As and Run** button.
- To *move* the existing report to the selected category, click the **Save and Run** button.

Deleting Reports

To delete a report:

1 Select the desired report in the Reports tab of the Home page.

2 Click **Delete** in the Reports group of the Actions pane. A confirmation dialog opens.

3 Click the **OK** button.

Chapter 6

Managing Containers and Collections

About Containers

A *container* is the generic term for the various types of sets of requirements in RM. A requirement may belong to one or any number of named containers, or may exist outside all containers. Containers are not restricted by class and may span the entire project. Multiple versions of a requirement may exist in the same container, but typically only one version is utilized in a given container.

Types of Containers

You can store requirements in the following types of containers:

- **Collection**: A dynamic set of requirements with rules that determine new version membership. By default, the newest version of a requirement becomes a member of the collection and the previous version is removed from the collection. In concept, this is similar to a floating version label.
- **Baseline**: A fixed set of version specific requirements that optionally include their relationship to each other. Baselines are created from a selection of containers or a query. Once created, a baseline cannot be changed. In concept, this is similar to a fixed version label.
- **Document**: A set of requirements plus document structure and formatting. See Chapter 4, "Working with Documents" on page 83.
- **Snapshot**: A snapshot is a read-only copy of a document. It preserves the current state of the document for future reference. While creating a snapshot, you can also create a baseline of the requirement versions currently in the document. See "Creating a Snapshot of a Document" on page 96.

Deleting a Container

To delete a collection:

1. Select **Manage Containers** from the Containers menu. The Manage Containers dialog opens.
2. Select the collection you want to delete, and then click **Delete Container**.
3. When prompted to confirm the deletion, click **OK**.

Updating Container Properties

You can rename and change the description for a collection, and modify the collection rules that define how and whether new child objects should be included in the collection.

To rename a collection:

1. Select **Manage Containers** from the Containers menu. The Manage Containers dialog opens.

2 Select the desired container.

3 Click **Container Properties**. Modify the Name and Description as needed.

4 If the container is a collection, you can modify the Collection Rules. See "Creating a New Collection" on page 134 for information on defining collection rules.

Moving Containers to a Different Category

When you create a container, you can assign it to a category. The following procedure describes how to change the category assignment of an existing container.

To move containers to a different category:

1 Select **Move containers to category** from the Containers menu. The Move Containers to category dialog opens.

2 **Look for container:** Select the type of container to be moved. A table appears that is populated with the selected container type.

3 Select the container(s) that you wish to move. CTRL-Click to select multiple containers from the table.

4 **Category:** Select the category to which you wish to move the containers.

TIP To quickly locate a category in the list, type the name of the category in the **Find** box of the expanded **Category** list.

5 Click the **Move** button.

Comparing Containers

To compare the contents of two containers:

1 Select **Compare containers** from the Containers menu. The Compare Containers dialog opens.

2 **Select Container:** Click the Browse (...) button to select the containers to compare.

3 **Description:** Select this checkbox to display each container's description in the results.

4 Click the **Compare** button. The Requirement Difference Summary dialog opens. The summary lists the Requirement ID, Title, Description (if the Description check box is selected in the Find Container dialog box), and the Class for the following results:

- **Requirements only in container:** This is a list of the requirements that are in the first container, but not in the second container.
- **Requirements only in container:** This is a list of the requirements that are in the second container, but not in the first container.

- **Changed requirements:** This is a list of the changed requirements in both containers. This list includes items for which the Object Version ID is different, even if the Requirement ID is the same.
- **Unchanged Requirements:** This is a list of the unchanged requirements in both containers.

5 To open a Details view of a requirement, double-click on it.

6 **Print:** Click this button to print the Requirement Difference Summary.

Refreshing the Contents of a Container

If a collection is based on a query or script, you may need to manually refresh the content of the collection. You can set a project-wide option to automatically refresh all collections that are based on queries or scripts, however if this is not set for performance reasons then you can refresh the content of the collection by selecting the collection and pressing the **Refresh Container** link on the Manage Containers dialog box.

Copying a Container's URL to the Windows Clipboard

You can copy the URL of a container and paste it into a file for future use and reference. When that URL is later invoked, it will open RM Browser to that container.

To copy the URL of a container:

1 Select **Manage containers** from the Containers menu. The Manage Containers dialog opens.

2 Right-click the link icon next to the desired container.

3 Select **Copy Shortcut** (or a similar menu item, depending upon the browser you are using).

The URL is now on the Windows clipboard. You can now paste it into the file in which you wish to keep it.

About Collections

Collections are named groups of requirements from one or more classes. Collections provide a simple way to gather and organize requirements. Each requirement can be linked to many different collections, and each collection to many different requirements. In RM Browser, you can add requirements to a collection, remove requirements from a collection, and add, delete, rename, or baseline a collection.

CAUTION! When you display the content of a collection, you only see the requirements for which you have permissions in the category to which the requirements belong.

Opening a Collection to the Collection Work Page

To open a collection:

1 Display the Home page by clicking the root category in the project bread crumb:
RMDEMO › Usability

2 Double-click the desired collection in the Collections tab of the Selection pane. The Collection work page opens.

Managing Requirements in a Collection

You search for requirements from the **Organize by Collection** dialog box and then select the ones you want to add to or remove from a collection. You can specify search criteria on any or all of the three tabs on the **Organize by Collection** dialog box if you want to narrow search results or specify how the search results are displayed. You can run the search from any of the tabs.

TIP For a small and/or simple set of requirements, you can simply select them in a work page and click a button to add them to a collection. See "Adding Requirements to an Existing Collection" on page 75.

To add/remove requirements to/from a collection:

1 If the collection is not already open, open it to a work page.

2 Select **Organize by collection** from the Collections group of the Actions pane. The Organize by Collection dialog opens.

3 **Look for Class:** Select the class in which you want to search for requirements.

4 **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.

5 **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

6 **Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog.

7 **New Search:** Click this button to clear the current search criteria and results.

8 Select the desired requirements in the search results (Ctrl-click to multi-select, Shift-click to select a contiguous group).

9 **Collection:** Select the collection to which you want to add or remove requirements.

10 Click one of the following buttons:

- **Add:** To add the selected requirements to the collection.
- **Remove:** To remove the selected requirements from the collection.

Creating a New Collection

To create a collection:

1 Select **Collection** from the New menu. The Manage Containers -> New dialog opens.

2 **Collection Name:** Enter the name of the new collection.

NOTE

- Do not use Oracle reserved words in collection names.
- A collection name can contain a maximum of 256 characters.

3 **Description:** Enter a description of the collection. The maximum length of the description is 512 characters.

4 **Category:** Select an owning category from the list.

5 **Collection Rules**: Define the collection link rules to determine what happens to object links when you edit objects included in the collection. The options include the following:

- **Transfer to child**: When you edit the primary object and create a new child object, the links from the primary object are transferred to the new child object.
- **Delete from parent**: When you edit the project object and create a new child object, the links from the primary (parent) object are deleted.
- **Transfer to parent on deletion of child**: If you delete a child object, links are transferred to the parent.
- **Objects can be added/removed:** Select to allow requirements to be added or removed to the collection.
- **Use these rules as the default for new collections:** Select to automatically apply the above collection rules to all new collections in the future.

6 **Based on:** Select one of the following options to determine how the collection is initially populated:

- **Empty Collection:** Select this if you do not want to base the new collection on an existing container.
- **Selected Container(s):** Select this if you want to base the new collection on one of more existing containers. Then select one or more containers in the list. To select multiple containers, hold down the Control key while you select the containers. To select a range of containers, select the first container, press the Shift key, and then select the last container. When the new collection is created, all requirements of the selected container(s) are associated with it.
- **Query:** Select this if you want to place the results of a query in the new collection. Then select the desired report.

TIP To limit the listed reports to those of a specific category, select a category from the **Query** category list. To quickly locate a category in the list, type the name of the category in the **Find** box of the expanded category list.

7 Click the **Add** button.

Baselining a Collection

In Dimensions RM, baselines are stable, unchangeable groups of requirements. In other words, baselines are collections that have been "frozen."

Note the following:

- Baselines and collections are separate entities. A baseline is a copy of a collection with special controls that keep the requirements in the baseline from being updated. A baseline is always referred to as a "baseline." A collection is referred to as a "collection."
- After a baseline is created, you can rename or delete it if you have permission to do so.

NOTE You cannot rename a baseline that was created from Dimensions CM using the ALM integration.

- You can create a baseline based on a collection, or a collection based on a baseline.
- The original collection from which the baseline was created remains unchanged and can be modified later.
- If you try to edit a requirement in a baseline, a message informs you that you cannot change the requirement, and that your changes will create a new version of the requirement.
- When you create a collection from an existing collection, the latest versions of the requirements are used.
- By default, links between objects in the baseline are also included in the baseline, and cannot be modified once the baseline is created. You may be able to modify links in a baseline depending on how your administrator has configured the project.
- Requirements with suspect links remain suspect even after they are baselined.
- You can clear suspect links from a requirement even if the requirement is baselined.
- Even if the administrator denied you the Delete Baseline and Rename Baseline permissions, you can delete and rename a baseline if you created it. In other words, in this situation, the permissions that are denied by the administrator are overridden.
- A baselined requirement has a lock icon in its banner in the **Edit Attributes** dialog, and the **Update** button is disabled. If you mouse over the icon a popup will appear that says: Baseline Locked.
- You can base a baseline on a query, that will generate dynamically when you run it.

To baseline a collection:

1. Select **Baseline** from the New menu. The Manage Containers dialog opens.
2. **Baseline Name:** Enter a name for the baseline.

NOTE

- Do not use Oracle reserved words in baseline names.
- A baseline name can contain a maximum of 256 characters.

3 **Description:** Enter a description of the baseline. The maximum length of the description is 512 characters.

4 **Category:** Select the category where you will store the baseline. You can add a baseline to any category to which you have access.

TIP To quickly locate a category in the list, type the name of the category in the **Find** box of the expanded **Category** list.

5 Select one of the following options:

- **Based on Selection Container(s):** Select this if you want to baseline one or more collections or baselines. Then select one or more collections or baselines or a combination of collections and baselines from the list of containers. To select multiple containers, hold down the Control key while you select the containers. To select a range of containers, select the first container, press the Shift key, and then select the last container. When the new baseline is created, all requirements of the selected container(s) are associated with it.
- **Based on Query:** Select this if you want to baseline the results of a query. Then select the desired report.

TIP To limit the listed reports to those of a specific category, select a category from the **Based on Query** category list. To quickly locate a category in the list, type the name of the category in the **Find** box of the expanded category list.

6 Click the **Create Baseline** button.

Chapter 7

Importing Requirements

Importing Requirements from Microsoft Word Documents

RM Browser can import content from a Microsoft Word document and use it to:

- Create new requirements
- Create new requirements and an RM document
- Update or Replace existing requirement versions

When importing a Word document, you can choose to import:

- The entire document (creating an RM document)
- Only the requirements (that are in the proper table format)
- Only the selected text (into attributes you specify at run time)

Should I Use RM Browser or RM Import?

Layout/Format: The import feature of RM Browser requires that the Word document be of the expected layout and format (as described in the following sections). Whereas RM Import requires that you create an import template that defines the layout and format that is to be expected. The latter is more flexible, but also more time consuming to setup.

Subrequirements: Only RM Import can import subrequirements or tables within tables.

Formatting Requirements for Importation

The requirements in your document must be in tables that use the correct layout and formatting in order to be recognized as requirements (the exception is when importing only a specific selection of text, but that would be an inefficient and tedious means of importing a large number of requirements).

There are two main layout options when creating tables for requirements:

- Each row is a requirement:

Title	Text	Category	Delivery Phase
EPhoto will be an online	The ePhoto system shall enable the user to browse an on-line photo album.	RMDEMO/Functional/Design	Build1|Build4
Stored photo slideshows	The ePhoto system shall provide the capability to create a slide shows	RMDEMO/Availability/Cost	TBD|Build3

- Each table is a requirement:

TITLE	Runs on "standard" home PC		
Priority	**Paragraph Title**	**Document ID**	
1	Feature 3	Marketing Rqmts	
Category	RMDEMO/Power	**Delivery Phase**	Build1|TBD
Text			
The ePhoto system shall be accessible to the user from a regular home PC environment running standard Windows software. It is envisaged that this is a software-only application from the user's perspective.			

And there are two ways to organize the requirements by class:

- Specify the class for the entire table in the first row:

KEYWORDS	Marketing_Requirements	
Rqmt ID	**Title**	**Text**
MRKT_000001	EPhoto will be an online	The ePhoto system shall enable the user to browse an on-line photo album.
MRKT_000023	Stored photo slideshows	The ePhoto system shall provide the capability to create a slide shows

- Specify the class of each requirement:

KEYWORDS	**Rqmt ID**	**Title**	**Text**
Marketing_Requirements	MRKT_000001	EPhoto will be an online photo album	The ePhoto system shall enable the user to browse an on-line photo album.
Product_Requirements	PROD_0000023	Runs on "standard" home PC	This system shall use a database in order to store user annotations.

The following rules apply when formatting requirement tables:

- All values (requirement content) must be free of bold formatting.
  Even a single bold formatted blank space in the midst of properly formatted text will cause the text to be treated as an attribute name rather than as an attribute value.
- General text formatting (color, underline, italic, etc.) is imported for text attributes and ignored for others. (As noted above, bold must not be used in attribute values.)
- Attribute names (*not* values) must be in bold.

- **KEYWORDS** is the attribute name for class used in the above examples; however, you can specify a different attribute name in the **Class Identifier** field when importing the document.
- **Category** must specify the full path from the root category. For example: `REDEMO/Functional/Design`
- The document may contain any number of tables.
- Tables may contain any number of rows (requirements) and any number of columns (attributes).
- To specify multiple values for a list attribute, separate the values with the pipe (|) character. For example: `Build1|Build4`
- To Update/Replace an existing RM requirement, include its **Rqmt ID** attribute (PUID).
- The Group Attribute type is not supported for importation.
- During import, you will be prompted for any mandatory attribute values that are not included in the tables.
- Images can be imported into the body of an RM document, but not into requirements.

Formatting an Entire Word Document for Importation

If you choose to import an entire Word document:

- Requirement data will be imported from properly formatted tables (as described in "Formatting Requirements for Importation" on page 138).
- Chapters and sub chapters will be created based upon the heading hierarchy of the Word document.

Word Document	RM Document
Heading 1	Chapter
Heading 2	Sub-chapter
Heading 3	Sub-sub-chapter
etc.	

- Images will be imported into body content (not into requirements).
- General text formatting will be imported.

Importing a Word File

For clarity, the three modes of importation (Table[s] only, Selection only, and Entire Document) are described separately in the following sections. However, all three modes begin the same way, so that portion is described here.

IMPORTANT! ActiveX controls must be fully enabled in your Web browser for the security zone that contains the RM server. Disable any security on ActiveX controls in that zone.

To initiate the importation of a Word document:

1. In RM Browser, select **Word document** from the **Import** menu. The MS Word Import dialog opens.
2. **File Name:** Click the **Browse** button to navigate to and select the Word file, and then click the **Open** button.
3. When prompted to Open or Save the file, select **Open**. The file opens in Microsoft Word.
4. Choose whether to Create, Update, or Replace content from the Word document. (Skip this field if you will be importing a Selection only.):
   - **Create** will create new requirements in RM.
   - **Update** will update existing versions of requirements with new content from the Word document, *without* creating new versions. Only existing requirements that have new values in the Word document will be updated.
   - **Replace** will create new versions of existing requirements using the new content from the Word document. Only existing requirements that have new values in the Word document will be replaced.
5. Proceed to the relevant importation mode section below:

- "Table[s] only Importation Mode" on page 141
- "Selection only Importation Mode" on page 141
- "Entire Document Importation Mode" on page 142

Table[s] only Importation Mode

Continued from "Importing a Word File" on page 140.

1. Select **Table[s] only** from the drop-down list.
2. **Class Identifier:** Specify the attribute name you used to identify the class. For example, `KEYWORDS`.
3. Click the **Import** button. A second MS Word Import dialog opens. This one includes a information about the requirements that were created and a summary of the importation results. Click the **Close** button to dismiss the results.
4. Click the **Close** button on the remaining MS Word Import dialog.

Selection only Importation Mode

Continued from "Importing a Word File" on page 140.

1. Select **Selection only** from the drop-down list.
2. **Select Class to Create Requirement:** The new requirement will be assigned to the class that you select from this drop-down list.
3. **Select RM Attribute to add selected text:** The text that you select in the Word document will be used as the value for the attribute that you select from this list.
4. In Microsoft Word, select the desired text from the open Word document. Select only text. Tables and graphics cannot be imported into a requirement.

5 Return to the MS Word Import - Dimension RM dialog and click the **Import** button.

6 The New *ClassName* dialog will appear if there are any unsatisfied required attributes (which there will be, unless there are no required attributes or the only required attribute was the one you specified above). At the least, Category is required by RM.

Fill in the fields for any required attributes (and any other fields that you wish to fill in), and click the **Save** button.

7 Click the **Close** button on the MS Word Import - Dimension RM dialog.

Entire Document Importation Mode

Continued from "Importing a Word File" on page 140.

1 Select **Entire Document** from the drop-down list.

2 **Class Identifier:** Specify the attribute name you used to identify the class. For example, KEYWORDS.

3 **Document Name:** Specify a name for the RM document that is to be created or revised.

4 Click the **Import** button. A second MS Word Import dialog opens. This one includes a information about the requirements that were created and a summary of the importation results. Click the **Close** button to dismiss the results.

5 Click the **Close** button on the remaining MS Word Import dialog.

Importing Requirements from an XML File

You can easily add, update, or replace large batches of requirements. Save your query results as an XML file, make changes to the requirements with an editor such as Microsoft Word or Notepad, and then import your changes using the XML import feature.

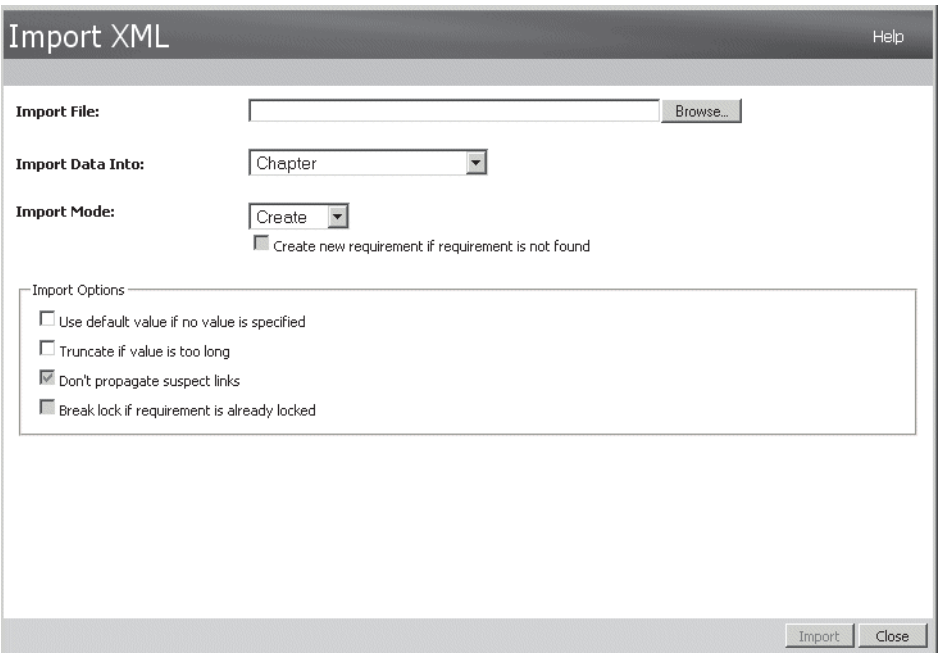
For example:

A requirements manager wants to change the "priority" attribute of 100 requirements from "Must" to "Hope." She opens RM Browser and runs the desired script. She saves the query results as an XML file. In the XML file, she changes the "priority" attribute and saves the updated XML file.

The requirements manager now imports the XML file by completing the **Import XML** dialog box. After the import process completes, an import results page opens that displays the class name, PUID, status, and error details for each requirement.

To import an XML file:

1 Click **XML file** from the **Import** menu. The **Import XML** dialog opens.



2 In the **Import File** field, type the path and file name of the XML file you want to import or click **Browse** to navigate to the file.

3 In the **Import Data Into** list, select the class into which you are importing the file.

4 In the **Import Mode** list, select one of the following options:

Mode	Description
Create	Creates a new requirement if the object node in the XML file does not exist.
Update	Updates the attributes that have changed for each object node in the XML file.
Replace	Creates a new current revision for each object node in the XML file with the changes to the attributes specified in the XML file.

5 If you want to create a new requirement when a requirement in the XML file has an object ID that does not match the object ID of a requirement in the database, select the **Create new requirement if requirement is not found** check box. This option is only available for the **Update** and **Replace** modes.

6 Under **Import Options**, select one or more options as described in the following table:

Option	Description
Use default value if no value is specified	If no value is specified for a mandatory attribute, its default value is used. If the attribute has no default value, an error message is displayed in the import results output page.
Truncate if value is too long	If the value is longer than the maximum value for the attribute, the value is truncated before the requirement is saved.
Don't propagate suspect links	Links are not marked as suspect when the requirement is updated or replaced. **NOTE:** This option is not available for the **Create** mode.
Break lock if requirement is already locked	User locks are removed before attempting to update or replace the requirement. Otherwise, a message is displayed in the import results output page. **NOTE 1:** This option does not remove CM locks. **NOTE 2:** This option is not available for the **Create** mode.

Importing Requirements from a CSV File

You can import requirements text from CSV files. When you import from a CSV file, you can map fields (rows) in the CSV file to specific requirements and attributes in Dimensions RM. You can create new requirements, update existing requirements with new data, and delete or undelete existing requirements.

IMPORTANT! DO NOT modify the CSV file in Microsoft Excel or any other non-text editor! Doing so may alter the data in the file and cause CSV import to fail.

To import requirements and requirement data from a CSV file:

1 Display the **My Work** view.

2 Select **CSV file** from the Import menu. The CSV Import dialog opens.

3 In the **File Name** field, enter or browse to select the path to the CSV file you want to import.

4 From the **Import Mode** list, choose one of the following import options:

- **Create**: Create new requirements from the rows in the CSV file.
- **Update**: Update attributes in existing requirements with new data from the CSV file. The attributes are updated in requirements that match the specified criteria.
- **Replace**: Replace attributes in existing requirements with new data from the CSV file, creating a new current version of the requirement. The attributes are replaced in requirements that match the specified criteria.

- **Delete**: Delete data in requirements that match the specified criteria.
- **Undelete**: Restore deleted data in requirements that match the specified criteria.
- **Remove**: Remove data in requirements that match the specified criteria.
- **Link**: Create relationships between requirements that match the specified primary class criteria to requirements that match the specified secondary class criteria. In this way you can use the CSV import functionality just to create links in RM.

NOTE TEXT type attributes are not valid for Link mode so they will not be included in the attribute list when in Link mode.

- **Unlink**: Remove relationships between requirements that match the specified primary class criteria to requirements that match the specified secondary class criteria.

5 From the **Field Separator** list choose **Comma** or **Semi-colon**, depending on what separator is used in the CSV file.

6 To limit the range of rows to import, select **From** from the **Rows to Be Imported** option and enter the range. Otherwise, leave **All** selected to imported data from all rows in the file. If the file has a header row, you can omit this by selecting the **File has header row** option.

7 From the **Log Level** list you can choose the level of detail in the summary report that displays after you start the import. Choose **Terse** or **Verbose**.

8 Under the **RM Mapping** heading, you must enter criteria to define how data from the CSV file will be imported to Dimensions RM. The mapping configuration differs

significantly depending on the import mode that you selected. Carefully review the following to understand how to use the RM Mapping options.

Import Mode	Mapping Guidelines
Create	■ You must map columns from the CSV file to requirements attributes in RM. Data from the columns you select will be imported to the attributes you map the columns to, in the new requirements. ■ First select the requirements class from the **RM Class** field. Then, select the column from the **CSV Column List** field and the corresponding attribute from the **RM Attribute** list. Click the right arrow button to add the mapped pair to the **Mapped List** field.
Update	■ You must first define criteria to locate the requirements to update, under **Mapping Should Be Used to Locate Objects**. You do this by matching values from columns in the CSV file to values from attributes in the requirements in RM. Every requirement with matching attribute values will be updated. First, select the requirement class from the **RM Class** field. Then, choose the CSV column to match from the **CSV Column List** field and the corresponding attribute from the **RM Attribute** list. Click the right arrow button to add the matched pair to the **Mapped List** field. ■ You must then define the attributes to update under Mapping to Be Used to Populate Data. Data from the CSV columns you select here will be imported to the attributes you map the columns to, in the requirements that are located by the criteria you defined under Mapping Should Be Used to Locate Objects. Select the column from the **CSV Column List** field and the corresponding attribute from the **RM Attribute List** field, then click the right arrow button to add the mapped pair to the **Mapped List** field. ■ You can optionally choose to only include rows from the CSV file that uniquely match one object in Dimensions RM. Select the **Ignore rows matching multiple objects** option to do this. For example, if a Title value from the CSV column matches the value of the Title attribute from several requirements, then this CSV row and corresponding requirements will be ignored. ■ You can also optionally create new requirements if no requirements matching the criteria you specified are found, and populate the new requirements with the data mapping defined under **Mapping to Be Used to Populate Data**.
Replace	See the above information on Update.

Import Mode	Mapping Guidelines
Delete	■ You must define criteria to identify the attributes from which data will be deleted. Do this by matching columns from the CSV file to attributes in the RM requirements. First choose the requirements class from the **RM Class** field. Then, select the CSV column from the **CSV Column List** field and the corresponding RM attribute from the **RM Attribute List** field. Click the right arrow to add the mapped pair to the Mapped List field. Any attributes with values that match the value of the corresponding CSV column will be deleted. ■ You can optionally choose to only include rows from the CSV file that uniquely match one object in Dimensions RM. Select the **Ignore rows matching multiple objects** option to do this. For example, if a Title value from the CSV column matches the value of the Title attribute from several requirements, then this CSV row and corresponding requirements will be ignored.
Undelete	■ You must define criteria to identify the attributes from which data will be undeleted. Do this by matching columns from the CSV file to attributes in the RM requirements. First choose the requirements class from the **RM Class** field. Then, select the CSV column from the **CSV Column List** field and the corresponding RM attribute from the **RM Attribute List** field. Click the right arrow to add the mapped pair to the **Mapped List** field. Any attributes with values that match the value of the corresponding CSV column will be undeleted. ■ You can optionally choose to only include rows from the CSV file that uniquely match one object in Dimensions RM. Select the **Ignore rows matching multiple objects** option to do this. For example, if a Title value from the CSV column matches the value of the Title attribute from several requirements, then this CSV row and corresponding requirements will be ignored.
Remove	■ You must define criteria to identify the attributes from which data will be removed. Do this by matching columns from the CSV file to attributes in the RM requirements. First choose the requirements class from the RM Class field. Then, select the CSV column from the CSV Column List field and the corresponding RM attribute from the RM Attribute List field. Click the right arrow to add the mapped pair to the Mapped List field. Any attributes with values that match the value of the corresponding CSV column will be removed. ■ You can optionally choose to only include rows from the CSV file that uniquely match one object in Dimensions RM. Select the **Ignore rows matching multiple objects** option to do this. For example, if a Title value from the CSV column matches the value of the Title attribute from several requirements, then this CSV row and corresponding requirements will be ignored.

Import Mode	Mapping Guidelines
Link	■ You must define criteria to locate the requirements to link. You must locate two requirements, a primary class and secondary class requirement. The resulting relationship is created between the primary and secondary requirement. ■ First choose the type of relationship from the **RM Relation** field. ■ To define the criteria for the first requirement, match columns from the **CSV Column List** field under **Primary Class** to attributes in the RM Attribute List field. Select the values and click the right arrow button to add the mapped pair to the **Mapped List** field. ■ To define the criteria for the second requirement, match columns from the **CSV Column List** field under **Secondary Class** to attributes in the **RM Attribute List** field. Select the values and click the right arrow button to add the mapped pair to the **Mapped List** field. ■ You can optionally choose to only include rows from the CSV file that uniquely match one object in Dimensions RM. Select the **Ignore rows matching multiple objects** option to do this. For example, if a Title value from the CSV column matches the value of the Title attribute from several requirements, then this CSV row and corresponding requirements will be ignored.
Unlink	■ You must define criteria to locate the requirements to unlink. You must locate two requirements, a primary class and secondary class requirement. The relationship is removed between the primary and secondary requirement. ■ First choose the type of relationship from the **RM Relation** field. ■ To define the criteria for the first requirement, match columns from the **CSV Column List** field under **Primary Class** to attributes in the **RM Attribute List** field. Select the values and click the right arrow button to add the mapped pair to the **Mapped List** field. ■ To define the criteria for the second requirement, match columns from the **CSV Column List** field under **Secondary Class** to attributes in the **RM Attribute List** field. Select the values and click the right arrow button to add the mapped pair to the **Mapped List** field. ■ You can optionally choose to only include rows from the CSV file that uniquely match one object in Dimensions RM. Select the **Ignore rows matching multiple objects** option to do this. For example, if a Title value from the CSV column matches the value of the Title attribute from several requirements, then this CSV row and corresponding requirements will be ignored.

9 When you are done defining the mappings, click the **Import** button.

Chapter 8

Administration

Managing Categories

The following sections describe ways you can manage categories in RM Browser. Only users who belong to the Administrators group can open the Manage Categories dialog.

Adding a Category

To add a category:

1. Select **Manage categories** from the Administration menu. The Manage Categories dialog opens.
2. Click **New Category**.
3. In the **Category Name** field, type the name of the new category. You can enter a maximum of 64 characters.
4. In the **Description** field, type an optional category description. This description appears as a tooltip when you hover over the category in the category tree.
5. In the **Parent Category** tree, select the parent category for the new category.
6. Click the **Add** button.

Deleting a Category

To delete a category:

1. Select **Manage categories** from the Administration menu. The Manage Categories dialog opens.
2. Select the category you want to delete and click **Delete Category**.
3. When prompted to confirm the deletion, click **OK**.

NOTES You cannot delete the root category or any category that has subcategories. To delete a category with subcategories, delete the subcategories first. You cannot delete a subcategory if it contains objects, scripts, or filters.

Renaming a Category

To rename a category or its description:

1. Select **Manage categories** from the Administration menu. The Manage Categories dialog opens.
2. Select the category you want to rename.
3. Click **Rename Category**.
4. In the **Category Name** field, type the new name. You can enter a maximum of 64 characters.
5. In the **Description** field, enter an optional category description. This description appears as a tooltip when you hover over the category in the category tree.

6 Click the **Rename** button.

Moving a Category

To move a category:

1 Select **Manage categories** from the Administration menu. The Manage Categories dialog opens.

2 Drag and drop the category to the desired location in the tree.

Moving Requirements Between Categories

A requirement can exist in only one category at a time, so moving a requirement to a different category also removes it from the category it was in before. The Organize by Category dialog allows you to specify search criteria to locate the requirements that you wish to move.

NOTE For information on the administrative functions you can perform with categories, see the *Serena Dimensions RM Administrator's Guide*.

To move requirements between categories:

1 Select **Organize by category** from the Administration menu. The Organize by Category dialog opens.

2 **Look for class:** Select a class in which to search for requirements. If an object was selected when you invoked the dialog, this field will be pre-populated; change it as needed.

3 **Manage Categories:** Click this link if you want to create, rename, or delete any categories before proceeding with the move procedure. The Manage Categories dialog opens. See "Managing Categories" on page 150.

4 **Remember these options:** Select this checkbox to retain the current settings as the default for future invocations of the dialog.

5 **Constraints:** As needed, specify criteria to locate the desired requirements. See "Attribute Constraints Tab" on page 26 and "Relationship Constraints Tab" on page 29.

6 **Display Options:** As needed, specify how to display the results. See "Display Options Tab" on page 32.

7 **Find Now:** Click this button to run the search. The results are displayed in the lower pane of the dialog.

8 **New Search:** Click this button to clear the current search criteria and results.

9 Select the desired requirements in the search results (Ctrl-click to multi-select, Shift-click to select a contiguous group).

10 **Category**: Select the category to which you want to move the selected requirements.

11 Click the **Move** button.

Managing Document Locks

To break locks on documents:

1 Select **Document Locks** from the Administration menu. The Document Locks dialog opens.

2 **Unlock All:** Click this button to unlock all locked documents.

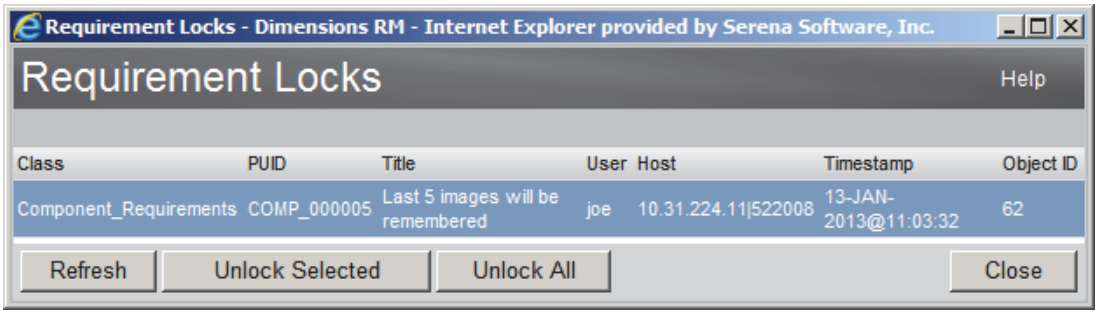
3 **Unlock Selected:** Click this button to unlock only the selected documents. Ctrl-click to select multiple documents.

4 **Refresh:** Click this button to update the display of locked documents.

Managing Requirement Locks

To break locks on requirements:

1 Select **Requirement Locks** from the Administration menu. The Requirement Locks dialog opens.



2 **Unlock All:** Click this button to unlock all locked requirements.

3 **Unlock Selected:** Click this button to unlock only the selected requirements. Ctrl-click to select multiple requirements.

4 **Refresh:** Click this button to update the display of locked requirements.

Configuring Project Settings

The following sections describe how to specify project settings.

Specifying the Concurrent Editing Mode

RM Browser can be configured to use locking or merging to handle the situation where multiple users edit a requirement, chapter, or document at the same time. If locking is in

effect and another user has an item locked, you will see that the item is locked and by whom if you open it for editing.

NOTE "Baseline Locked" indicates that the item version is part of a baseline and thus cannot be modified. This is unrelated to concurrent editing mode.

To specify the concurrent editing mode:

1. Select **Settings** from the Administration menu. The Project Settings dialog appears.
2. Select **General**.
3. If you want to lock a requirement while you edit it, which means that no other user can make changes without unlocking it, select **Lock requirements while editing**.
4. If you want to allow others to make changes to a requirement while you are editing it, which means that the changes must be merged later, click **Allow concurrent editing and merging**.
5. Click **OK**.

Specifying the RM Browser Session Time Out Value

After a period of inactivity, an RM Browser session times out, and you are logged out of RM Browser. A new **Welcome** page opens so you can log in again. By default, the timeout session is 30 minutes.

NOTE This procedure should be performed on the Dimensions RM server only, not on client machines.

To specify the RM Browser session time out value:

1. Select **Settings** from the Administration menu. The Project Settings dialog appears.
2. Type the number of minutes in the **Client session idle timeout (minutes)** box.
3. Click **OK**.

Requiring Change Reasons

You can require users to specify change reasons for new and updated requirements. See "Submitting a Change Request for a New Requirement" on page 52.

The following rules apply to change reasons depending on whether they are set to mandatory:

- When replacing requirements, the change reason is mandatory in the edit page.
- When updating requirements, even if the change reason is mandatory, if you do not enter a new reason the previously entered reason will be carried forward.
- When rejecting requirements.

To require change reasons for change requests:

1. Select **Settings** from the Administration menu. The Project Settings dialog appears.

2 Select General, then either of the following under Change Reason:

- **Make Change Reason Mandatory for Propose New**
- **Make Change Reason Mandatory for Propose Change**

Automatically Refreshing Containers based on Queries

You can choose whether all containers and collections based on queries and scripts should be refreshed by default when they are opened. This may affect performance. If collections based on queries significantly slow performance, you can manually refresh their content as needed as well. See "Refreshing the Contents of a Container" on page 132.

To automatically refresh containers based on queries:

1 Select **Settings** from the Administration menu. The Project Settings dialog appears.

2 In the General category, under **Containers**, select the **Automatic Refresh** option.

3 Click **OK**.

Specifying Whether to Display Title Numbering in Documents

In Documents View in RM Browser, requirements and chapters are numbered. By default, when you publish a Microsoft® Word document from Documents View, the Word document includes the numbers you see in the document in Documents View.

To prevent the numbers from appearing in the Word document:

1 Select **Settings** from the Administration menu. The Project Settings dialog appears.

2 Select the **Documents** node on the Project Settings dialog box.

3 **Publish Chapter Title numbering:** Clear this check box if you want to create your own styles in Word for chapters that include automatic numbering. In this case, the automatic numbering may not match the numbers that you see in the document in Document View.

4 **Publish Requirement Title numbering:** Clear this check box if you want to create your own styles in Word for requirements that include automatic numbering. In this case, the automatic numbering may not match the numbers that you see in the document in Document View.

5 Click **OK**.

Setting Autoloading of Documents

You set the default for autoloading of documents, that is, the document that was last opened in the previous RM Browser session is opened in the next session. The user can override this settings in the **Project Settings** dialog box.

To set autoloading of documents:

1 Select **Settings** from the Administration menu. The Project Settings dialog appears.

2 Select the **Documents** node on the Project Settings dialog box.

3 Select or clear the **Auto load document** check box.

4 Click **Apply**, and then click **OK**. You must restart RM Browser for the setting to take effect.

Configuring Quick Search Display

The administrator can change the project display properties that determine the columns that are displayed in the quick search results for a specific class.

NOTE Users can personalize these settings, overriding the defaults set for the project. See the "Configuring the Quick Search Display" on page 44.

To change the columns displayed in quick search results:

1 Select **Settings** from the Administration menu. The Project Settings dialog appears.

2 Select **Quick Search**.

3 Select a class in the **Choose a class** list. The **Attributes To Display** and **Sorting Order** sections are displayed.

4 To specify the columns to display, and their order:

a Select the attribute on the left in the **Attribute to Display** list.

b Click the right arrow button. The attribute is moved to the display list on the right. If you change your mind, select the attribute and click the left arrow button to move it back to the **Attributes to Display** list. (Alternatively, you can double-click an attribute to add it to the display list on the right.)

c Use the up and down arrow buttons to the right of the display list to change the display order of the columns.

5 To specify the sort order and type:

a Select sorting criteria in the **Sorting Order** list, such as *Category* or an attribute.

b Click one of the following buttons:

- **Alphabetic** 

for a simple alphabetic sort.
- **Numeric** 

for a numeric sort. This type of sort can be used for alphanumeric attributes such as paragraph numbers.

NOTE Alternatively, you can double-click an attribute to add it as an alphabetic sort to the sort list on the right.

c Use the up and down arrow buttons to the right of the sort list to specify how you want data sorted.

NOTE If you choose an attribute with the *Date* data type, the results are sorted in date order regardless of whether you chose **Alphabetic** or **Numeric**.

For example, select **Paragraph ID** if you want the query results to be sorted in the order presented in the original document, and click the **Numeric decimal** button to

sort by paragraph number. Then select **Priority** and click the **Alphabetic** button if you want the requirements with the same paragraph ID sorted by the priority assigned to them.

6 Select another class, if necessary, and repeat the preceding steps.

NOTE You do not have to click **Apply** before you select another class. The changes you make are remembered as long as the dialog box is open.

7 **Automatically run default query:** Select this checkbox to run the most recently used search criteria when you open the page. If this feature is not enabled, the Quick Search fields will be populated with the criteria of the most recent search, but no results will be displayed until you click the Search button.

8 **Activate Pagination:** Select this checkbox to break the results up into multiple pages if they exceed a certain quantity. Specify that quantity in the **Number Of Records Display Per Page** field.

9 By default, only current requirement versions are shown in the results even if a baseline or snapshot is selected. To see the actual versions used in a baseline or snapshot, select the **Automatically activate query across all requirement versions if baseline or snapshot is selected** checkbox.

10 Click the **OK** button.

Chapter 9

Customizing Web Forms and Templates

Customizing Web Forms

You can customize the RM Browser Web forms and dialog boxes that contain Dimensions RM attribute fields. To perform the customization, you edit an XML file to create a user-defined template.

In this section, when *attribute* is cited, it refers to Dimensions RM attributes, not JavaScript attributes.

The following list specifies the things you can do to customize Web forms and dialog boxes (referred to as *forms* in the remainder of this section):

- Change the order of attributes within a section.
- Specify the attributes to be included in a section.
- Create a subgroup of the attributes within a section. This subgroup can be a group box or an expandable heading that contains the attributes.
- Add a button, hyperlink, or other HTML element to the form that is linked to an external source that may return values to Serena® Dimensions® RM fields.
- Add your own sections and distribute attributes among them however you prefer.
- Change the number of columns that a section uses to lay out the attributes.
- Change or hide lists in query-style forms (for example, the operator list).

The user-defined template consists of an XML file that contains sections for the global items contained in the form (for example, scripts, cascading style sheets [CSS], and so on), dialog sections and their order, and the order of fields within each section.

NOTE The user-defined template is described in detail in "Template Layout" on page 159.

Template Processing

A templates directory (*RM_Install*\Common Tools *#.#*\tomcat*#.#*\webapps \rtmBrowser\forms) contains all the template files for the custom forms. Each database and project can have its own set of template files. A template file represents the custom layout for a single class type, an entire project, or all projects.

The templates are processed as follows:

1. RM Browser looks for a class-specific XML file, and loads it if it is found.
2. If a class-specific XML file is not found, RM Browser looks for the default file for the project (forms\database\project\default.xml), and loads it if it is found.
3. If a project-specific XML file is not found, RM Browser loads the global default file (forms\common\default.xml). This file creates a standard Dimensions RM appearance.

The naming of the database and project directories match their visible names. Template file names match the class name with a ".xml" extension.

NOTE If you rename a database, project, or class, you must rename the template directories or files.

Template Layout

As mentioned earlier, the template layout is an XML file.

The following illustration shows the layout of the global default file (the file that ships with Dimensions RM). This form applies to classes across projects.

```
<?xml version="1.0" encoding="UTF-8" ?>
- <form xmlns="http://schemas.serena.com/2005/01/rtmform" animationspeed="5">
    <section type="prioritized" />
    <section type="standard" />
    <section type="custom" />
    <section type="system" />
    <section type="attachments" />
    <section type="comments" />
    <section type="links" />
    <section type="history" />
    <section type="polls" />
    <section type="dimensions" />
  </form>
```

The following illustration shows the layout of an example user-defined XML file that is specific to a single class name within a project. The table that follows the illustration describes the tags in the file. The table is ordered logically, rather than by the appearance of the tags in the XML file.

CAUTION! Attributes can only be defined in one section.

```
<?xml version="1.0" encoding="UTF-8"?>
<form xmlns="http://schemas.serena.com/2005/01/rtmform" animationspeed="5">
    <script src="../jscript/myCustomScript.js"/>
    <stylesheet src="../css/myCustomStyleSheet.css"/>
    <section type="user" label="My First Section" cols="3" labelplacement="top">
        <attribute id="ACTUAL_FIX_TIME" />
        <attribute id="DESCRIPTION" colspan="2"/>
        <group label="Release Information" cols="2" labelplacement="left" expandable="no">
            <attribute id="RELEASE_ID" label="Id" />
            <attribute id="RELEASE_DATE" label="Date" />
            <attribute id="RELEASE_STATUS" label="Status" />
        </group>
        <text><![CDATA[<a href="http://www.serena.com"><img
        src="http://www.serena.com/Images/logos/serena.gif"></a>]]></text>
    </section>
    <section type="user" label="My second Section" cols="2">
        <attribute id="RESPONSIBLE_ANAYLST" type="Custom" label="Analyst" colspan="2">
            <writeable>
                <xhtml>
<input name="myField" type="text" value="" size="30" maxlength="10"
onchange="doSomethingSpecial()" onfocus="doSomethingSpecial()" />
<button type="button" id="myButton" onclick="doSomethingSpecial()">Search...</button>
                </xhtml>
            </writable>
        </attribute>
    </section>
<!--<section type="standard" label="Standard Attributes" />
    <section type="custom" label="Custom Attributes" /> -->
    <section type="system" label="My System" />
    <section type="attachments" label="File Attachments" />
    <section type="comments" label="Discussions" />
    <section type="links" label="Relationships" />
    <section type="history" label="History" />
    <section type="polls" label="Polls" />
    <section type="dimensions" label="Dim CM Associations" />
</form>
```

Tag	Description
①	Sections in forms are set by default to open and close by a scrolling mechanism. The `animationspeed` option determines one of the following: ■ The speed of the scrolling (default `animationspeed=0`) ■ Whether the scrolling mechanism is used. If it is not used (`animationspeed=0`), the sections open and close immediately when the user clicks **+** or **-**. For information about how to configure the `animationspeed` option, see "Configuring the Expansion and Collapse of RM Browser Sections" on page 177.
②	The `<script>` tag contains a user-defined JavaScript file. You can include more than one JavaScript file. If a custom JavaScript file needs to perform processing after the form loads, unloads, gains focus, or loses focus, you can hook into the standard JavaScript `onload, onunload, onfocus, and onblur` events. These are dialog specific and occur after the form finishes its own processing of these events. The function names for each form follow: **New Requirement**, **Edit Attributes**, **Change Request**, **Comments**, **Form View, Documents View**: `objOnLoad, objOnUnload, objOnFocus, objOnBlur, objHistoryOnLoad` (**NOTE:** The Documents View form is displayed only after you click a requirement in the navigation tree.) **Query by Class**, **Query by Relationship**: `queryOnLoad, queryOnUnload, queryOnFocus, queryOnBlur` **Edit Query:** `editQueryOnLoad` (**NOTE:** This function is called after editing an existing query in the Query by Class or Query by Relationship dialogs after the field data has been entered.) **Link Objects**: `linkOnLoad, linkOnUnload, linkOnFocus, linkOnBlur` **Organize by Collection**: `collOnLoad, collOnUnload, collOnFocus, collOnBlur` **Approve Change Request**: `crOnLoad, crOnUnload, crOnFocus, crOnBlur` **Organize by Category**: `catOnLoad, catOnUnload, catOnFocus, catOnBlur` **Add to Chapter**: `atcOnLoad, atcOnUnload, atcOnFocus, atcOnBlur`
	There are other JavaScript functions that you can use with query-style forms and other forms that contain attributes. See "Query-Style Form Functions" on page 163 and "Helper Functions" on page 166 for details.
	The `rtmObjCustomHtmlPrint(attrName)` function is called for any custom HTML attribute to get the read-only (print) value. The `attrName` parameter is the internal attribute name. The return value is a string that contains that value, which can be any HTML text or plain text that is used in the printed page to represent the value of that attribute. This function applies to the **New Requirement** and **Edit Attributes** dialog boxes only.
③	The `<stylesheet>` tag contains a user-defined stylesheet. You can include more than one stylesheet tag.

Tag	Description
④	The <section> tag contains either a predefined section or a user-defined section. A predefined section contains a type, a label (defaults to the standard title for the section), the label placement (left or top; defaults to left), and the number of columns (defaults to two). A predefined section contains no other elements. Predefined section types include standard, custom, system, attachments, comments, links, history, polls, and dimensions. Predefined section types are used in the template (.xml) file. You can rearrange the placement of these sections. If a predefined type exists within the template file but would not normally be shown for an object, it is not displayed. If a predefined section does not exist within the template file, the section is not displayed. A user-defined section allows you to specify the order and grouping of attributes, and allows you to place custom fields on the form. A user-defined section contains a specific type (that is, "user"), a label, the label placement (left or top; defaults to left), and the number of columns (defaults to two). The label is the section label, but the label placement refers to attribute labels within that section.
⑥	The <group> tag allows you to physically group attributes, but in the confines of a section. A section could have several different groupings of attributes. The group specifies the attributes contained in it, a label, the label placement (left or top; defaults to left), the number of columns (defaults to two), and whether it is expandable or not (defaults to not expandable).
⑤	The <attribute> tag can specify a standard attribute or a custom field that populates an attribute. The layout of the fields within a section or group is from left to right. You can specify a custom label or use the default label for the attribute from the database. You can also specify the placement of the label (left or top, defaults to whatever the group or section is set to). The label is the section label, but the label placement refers to attribute labels within that section. You can specify a custom attribute type. RM Browser automatically generates a hidden attribute associated with a custom field by using the attribute id that is provided. You can specify how many columns the field consumes (defaults to one). See the description for tag 9 for options when you use XHTML/HTML inside an <attribute> tag.
⑦	The CDATA element can be used in <text> and <attribute> tags. It is used to insert HTML that is not well formed into an XML file. Use CDATA if you do not know that the additional text is XHTML compliant.

Tag	Description
⑧	The <writeable> tag contained in the attribute definition indicates that if the form is displayed for editing, this is the XHTML/HTML that will be used. Alternatively, a <read-only> tag means that if the form is displayed as read-only, this is the XHTML/HTML that will be used. It is your responsibility to transfer data to a hidden field. You have three options when you use XHTML/HTML: ■ The custom XHTML/HTML can apply to both editable and read-only forms (if specified directly inside the <text> or <attribute> tag). ■ Different XHTML/HTML can be provided for editable as opposed to read-only forms (if specified in <writeable> and <read-only> elements inside the <text> or <attribute> tag). ■ The XHTML/HTML can only apply to editable forms (if specified in <writable> only elements inside the <text> or <attribute> tag). With this option, read-only forms display the attribute in the standard way. The <writeable2> tag and <readonly2> tag are the same as the <writeable> tag and <readonly> tag, except that they are used whenever a range control is shown (any query-style dialog when **between** or **not between** is the selected operator). If these tags are not present, then the <writeable> tag and <readonly> tag are used for both controls. However, this is generally not recommended because it provides no way to specify a unique control ID and could cause the custom JavaScript to work in unexpected ways.
⑨	The <xhtml> tag can be used in <text> and <attribute> tags. It allows you to insert XHTML-compliant code that adds elements such as buttons to the form. You can also add text boxes inside <xhtml> tags with sizes set to any number of columns and rows, optionally with scrolling. For example, the following tag: <xhtml> <TEXTAREA name="New_custom11" id="new_id11" rows="4" cols="25" wrap="off"> </TEXTAREA> </xhtml> Adds a text box that allows four rows and 25 columns (in characters). The wrap="off" attribute enables scrollbars for this text box.

Query-Style Form Functions

The following functions can be used to customize the **Attribute Constraints** tab on query-style dialogs. They can be used to either change the form or the lists that appear when you hover over the down arrow button ▾ on either side of an attribute control. Query-style dialog boxes include:

- **Query by Class**
- **Query by Relationship**
- **Organize by Category**
- **Link**
- **Organize by Collection**
- **Add to Chapter**

The following functions can be used to customize query-style form lists that appear when you hover over the down arrow button ▾ on either side of an attribute control.

Function	Description
`rtmQueryOnOperatorSelection (attrId, operator)`	Called whenever an operator is selected in any query-style dialog. This function must return `true` if the selection is allowed or `false` if it is not allowed.
`rtmQueryOnValueOptionSelection (attrId, option)`	Called whenever a value option is selected in the list that opens to the right of the attribute control (**Query by Class** and **Query by Relationship** only). This function must return `true` if the selection is allowed or `false` if it is not allowed.
`rtmQueryAddCustomAttribute Operators(attrId)`	Called for any Web form custom attribute because the default operator list may or may not be appropriate. It should define the list in the same way as the `rtmQueryAdd...` functions, or may simply call one of them to get the same list. The `rtmQueryAdd...` functions are listed below: ■ `rtmQueryAddAlphaOperators` ■ `rtmQueryAddNumericOperators` ■ `rtmQueryAddDateOperators` ■ `rtmQueryAddListOperators` ■ `rtmQueryAddTextOperators` and are defined in `icObjectFormsMenus.js` (located in *<RM Install Dir>*`\rtmBrowser\jscript`). To customize the operator list, use the `rtmQueryAdd...` functions to build the list the way you want. Use the calls at the end of the functions to set the default operator. These calls include `rtmQueryLike` and `rtmQueryIn`.
`rtmQueryAddCustomAttribute Operators(attrName)`	Called for custom attributes when a query constraints dialog box that contains that attribute is opened.
`rtmQueryGetCustomValues(attrId, operator)`	Called whenever a query-style dialog is generating a script for each attribute. This function should generally not be necessary, but is provided in case the default processing is not sufficient. This function must return an array of values for any attributes using custom processing and `null` for any attributes using the default processing.

Function	Description
`rtmQuerySetCustomValues(attrId, values)`	Called to set **in** and **not in** custom attributes when loading an existing query for editing. This function is used in the case where a custom Web form hides an attribute that is part of an IN clause. When this occurs, Dimensions RM checks for the existence of the function and calls it so that the custom JavaScript can set the custom control to the correct value or values. This function returns `true` if the attribute was handled and `false` if it was not handled.
`rtmQueryShowValueOptions (attrId)`	Called to tell Dimensions RM to not show the list that opens to the right of the attribute control and contains the **Fixed** or **Entered at runtime** options.

Query-Style Form Function Parameters

The parameters for the "Query-Style Form Functions" on page 163 are described in the following table.

Parameter	Description
`attrId`	The attribute name with the dialog name appended to it. This parameter is used to uniquely identify an attribute. For example, `PUIDQryRS` or `PUIDQryRT` for the PUID on the **Constraints-Source** or **Constraints-Target** tabs on the **Query by Relationship** form.
`operator`	A string with the internal operator (`LIKE`, `IN`, `INITIALIZED`, and so on) or pseudo-operator (`BETWEEN` and `NOT BETWEEN`).
`option`	`FIXED` (specified during the creation of the script) or `RUNTIME` (specified by the user in response to a prompt during the execution of the script).
`values`	The values in the IN list of the script.

Helper Functions

The following functions are helper functions for Web form custom attributes. They are used to get and set the attribute values that Dimensions RM uses.

Function	Description
`rtmUtilGetAttributeElementId (attrId, isRangeCtrl)`	Builds an ID string based on the attribute name and the context from which it is being called. This function is not validated.
`rtmUtilGetAttributeValue (attrId, isRangeCtrl)`	Gets the value of the specified attribute from the Web form. If the element (as determined by `rtmUtilGetAttributeElementId`) is an `INPUT` tag (whether it was defined in a custom or standard section), it returns its value. Otherwise, it returns the `innerHTML` value of the element. If the attribute is not found, the function returns null.
`rtmUtilSetAttributeValue (attrId, value, isRangeCtrl)`	Sets the value of the specified attribute.

Helper Function Parameters

The parameters for the "Helper Functions" on page 166 are described in the following table.

Parameter	Description
`attrId`	The attribute name. This parameter is used to uniquely identify an attribute.
`value`	A string value to put into the Dimensions RM attribute in the Web form. This parameter does not work for non-Dimensions RM attributes.
`isRangeCtrl`	Valid values are `true` or `false`. This parameter is used with ranges (`BETWEEN` and `NOT BETWEEN`) that have two controls for a single attribute. The parameter would be `true` to show the second control.

Customizable Web Forms

The behavior of customized Web forms falls into two categories.

Editable Mode

Web Page	Behavior
New Requirement Edit Requirement Change Request Query by Class Query by Relationship Link Requirements Organize by Collection Organize by Category Add to Chapter	Each of these forms use the user-defined template for the object in "editable" mode with respect to customized attribute fields. For custom user fields, the "editable" XHTML/HTML that you provided is displayed. The header and footer sections of these forms are not customizable.

Read-Only Mode

Web Page	Behavior
Comments Form View Approve Change Request Documents View Traceability View	Each of these forms use the user-defined template for the object in "read-only" mode with respect to customized attribute fields. They display the layout without any user-editable fields. For custom user fields, they display either the "read-only" XHTML/HTML that you provided, or if none, the value of the specified field. If there is no `<writeable>` or `<read-only>` tag, the same XHTML/HTML is displayed in both editable and read-only forms. The header and footer sections of these forms are not customizable. **NOTE:** The Documents View and Traceability View forms are displayed only after you click a requirement in the navigation tree or traceability tree.

Allowable Tags

The following listing shows the allowable tags that you can use when customizing Web forms.

`<script>`:

`src` - URL to JavaScript file

`<stylesheet>`:

`src` - URL to Cascading Style Sheet (CSS) file

`<section>`:

`labelplacement` - `left` or `top` (whether label is placed beside or above attribute value)

`cols` - number of attribute columns within the section

`header` - `yes` or `no` (whether to show the expandable section header or not)

`justified` - `left` or `right` (how to justify an attribute within the attribute column)

`section type` - `prioritized`, `standard`, `system`, `custom`, `links`, `polls`, `comments`, `attachments`, `user`, `dimensions`

`user` section tags:

`<attribute>`:

`id` - attribute name (not display name)

`colspan` - number of attribute columns occupied by this attribute

`type` - `field` or `custom` (`field` shows the attribute in the standard way)

`custom` attribute tags:

`<readonly>` - how the custom attribute gets displayed in read-only forms (for example, plain text)

`<xhtml>` - for well-formed HTML

`<![CDATA[]]>` - for standard HTML (not well-formed HTML)

`<writeable>` - how the custom attribute gets displayed in editable requirement forms

`<xhtml>` - for well-formed HTML

`<![CDATA[]]>` - for standard HTML (not well-formed HTML)

NOTE: If neither custom attribute tag is used, the contents apply to both editable and read-only forms.

`<group>` (a subgroup within a section):

`cols` - number of attribute columns within a section

`expandable` - `yes` or `no` (whether the group can be expanded and collapsed or displayed in a fieldset)

tags: `<attribute>` and `<text>`, just like in `<section>`

`<text>`:

`colspan` - number of attribute columns occupied by this attribute

`type - if set to "url", generates and displays the URL to the requirement. For example, <text label="Requirement Link" type="url"/>`

tags: `<xhtml>` and `<![CDATA[]]>`, just like in `<attribute>`

Creating Templates to Publish Requirements

There can be many templates for each project. Each template is contained in the `Publish Templates` directory. This directory contains files that provide formatting for requirements from any class that you want to customize. This directory can also contain style, header, and footer files.

Users can select the template to be used for each document using the **Format Document** dialog box in Documents View.

NOTE You must select **Paragraph** in the **Requirement Format** section of the **Format Document** dialog box, not **Grid**.

To create a new requirement template:

1. Create a Microsoft® Word document that contains the template format.
2. Add attribute names (not attribute display names) as placeholders for the content of an attribute.

   The following illustration shows an example of a portion of such a Word document.

Priority	*<PRIORITY>*	*Delivery Phase*	*<DELIVERY_PHASE>*
<TITLE>			
<TEXT>			

IMPORTANT! When applying formatting to attribute names, <ATTRIBUTE>, you **MUST** select the entire attribute name **including** the angle brackets, < >. Else the attribute name and angle brackets will be published rather than the value of the attribute.

3. Save the file as an HTML file.

IMPORTANT!

- The file name must match the name of the class.
- You must set the file **Save as type** in Word to: **Web Page (*.htm;*.html)**. Do **NOT** select "Single File Web Page (*.mht;*.mhtml)" or "Web Page, Filtered (*.htm;*.html)".
- If you are using Word 2007 or 2010, you **MUST** save the file directly to the location described in step Step 6, below. You **cannot** copy the file there after it has been created.

4. Use Windows Explorer to manually change the file extension to: `.txt`

NOTE In the case of Word 2007 or 2010, Word will also create a directory with the same name as the file. This directory will contain various *.xml and theme files. Leave these files as they are.

5 If you want to decrease the size of the published files, you can remove extra formatting such as underlining or italics, and remove the `<style></style>` section.

6 Copy the `.txt` file to the following location:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\conf*DataBase**Project*\publish templates*TemplateDirectory**ClassName*.txt

Where *TemplateDirectory* is the name you want displayed in the **Publish Requirement Template** list on the Format Document dialog.

NOTE If you are using Word 2007 or 2010, you **MUST** save the file directly to the location described above (see Step 3). You **cannot** copy the file there after it has been created.

7 The template is now available for users to select. Repeat this procedure for each class for which you want a custom template.

NOTE If there are files in the following directory:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\conf*DataBase**Project*\publish templates*TemplateDirectory*

They are used and are available from the **Format Document** dialog box from the Documents View command bar. Otherwise, the style and header files defined for each project (if any) in the following directory are used:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\conf*DataBase**Project*

For information about creating the style and header files in the latter case, see "Defining Headers and Footers for Published Documents" on page 170 and "Defining Custom Styles for Published Documents" on page 171.

Defining Headers and Footers for Published Documents

By default, no header and footer information is published from Document View in RM Browser. This is the case even if the document you imported from RM Import has a header and footer.

You can define header and footer information to be included in such documents. To do so, you put a file with the header and footer information into a special directory. The header and footer is the same for all documents in a project.

NOTE The methods described in this section require no configuration in RM Import.

To create a header and footer file:

1 Save a Microsoft Word document with the desired header and footer in HTML format. When you do this, Word creates a separate HTML file called `header.htm`. The `header.htm` file is located in the following directory:

*Word_File_Dir**Word_File_Name*

2 Place the `header.htm` file in the following directory:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\conf*Database_Name**Project_Name*

NOTE

- Each project in each Dimensions RM database can have a unique `header.htm` file.
- You must create the *Database_Name* and *Project_Name* directories in the `conf` directory. You must also set up security to let the Web server user read the data in the directories. For IIS, the user is IUSR_*Machine_Name*. For Apache, it is the user that was set up to run Apache.

Defining Custom Styles for Published Documents

The basic reason you define custom styles is to change the style of chapter and requirement headings. However, you can customize any styles that are used in a document unless they are used as inline styles. (Some of the styles introduced when you edit a requirement using the HTML editor in RM Browser are inline styles and cannot be changed.)

To define custom styles:

1 Perform the procedure in "Defining Headers and Footers for Published Documents" on page 170.

2 Open the *Word_File_Name*.htm file in an HTML editor.

3 In a text editor, create a file named `DocumentPublishTemplate.txt`, and place it in the following directory:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\conf\Dat*abase_Name**Project_Name*

4 In the <*Word File Name*>.*htm* file, copy the text between the <*style*> and </*style*> tags and paste it into the `DocumentPublishTemplate.txt` file.

IMPORTANT! Include the `<style>` and `</style>` tags in the text that you copy.

Publishing a Document with File Attachments from a Separate Server

To be able to publish documents with file attachments from Documents View in RM Browser, Microsoft Word must be installed on the server. This is not acceptable for some customers. To resolve this issue, a separate machine with Word installed on it can be used to redirect the publishing of a document. This machine also must have

Dimensions RM installed on it and is referred to as a "publishing server." You configure the publishing server through a configuration file.

NOTE Both servers must have the same version of Dimensions RM installed on them, and both servers must point to the same Oracle instance.

To configure the publishing server:

Create a text file named `rm.cfg` in the following directory:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\conf

The format of the `rm.cfg` file follows:

```
[Document]
PublishServerURL=URL_of_publish_server
Database=Database_name
```

For example: `PublishServerURL=http://server/rtmBrowser`

If any specified information cannot be found, the current server or current database is used.

Customizing RM Browser Menus and Title Bars

You can use JavaScript to customize the menus in RM Browser. You can change the following items:

- Menu text
- Tooltips
- Images
- Sequence
- Number of columns
- Title of the view in the title bar

You can also add extra menu items. The extra menu items can point to any HTTP address (for example, http://www.serena.com).

There is a separate JavaScript file that you use to define menus for each RM Browser view. The JavaScript files are at the following location:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\jscript

The following table shows the file name for each view.

View	File
My Work	`icWebCreateMy WorkMenus.js`
Requirements	`icWebCreateRequirementViewMenus.js`
Document	`icWebCreateDocumentViewMenus.js`
Traceability	`icWebCreateTraceabilityViewMenus.js`

JavaScript Methods

The following sections describe the JavaScript methods you can use to create menus and change the name of the view in the title bar.

The JavaScript `rtmMenuNew` object is responsible for creating menus. You can use the following `rtmMenuNew` methods to create top level menus, columns, and menu items.

Method Name	Return Value	Description
`rtmAddTopLevelItemNew("<top menu name>")`	Object representing top menu	Creates the top menu items (for example, **View**, **Requirements**, **Change Request**). It is called on the `rtmMenu` object.
`rtmAddColumnNew()`	Object representing column in the top menu	Creates a new column under the top menu item. It is called on the top menu object.
`rtmAddMenuItem(<menu item image>, <menu item name>, <menu item ID>, <menu item tooltip>, <menu item image when enabled>, <menu item image when disabled>, <JavaScript method called when menu item is clicked>)`	Void	Creates a menu item and sets up its image display name, ID, tooltip, image displayed when the menu item is enabled, image displayed when the menu item is disabled, and the JavaScript method that is called when the menu item is clicked.

Title Bar Methods

You can use the following JavaScript methods to change the name of the view that is displayed in the title bar.

The main toolbar buttons	The additional toolbar button
`rtmCreateMy WorkTitleNew()`	`rtmCreateMy WorkTitleNewMore()`
`rtmCreateDocumentViewTitleNew()`	`rtmCreateDocumentViewTitleNewMore()`
`rtmCreateRequirementViewTitleNew()`	`rtmCreateRequirementViewMenuNewMore()`
`rtmCreateTraceabilityViewTitleNew()`	`rtmCreateTraceabilityViewTitleNewMore()`

Example 1: Adding a Menu Item to the View Menu

The following code example shows an `icWebCreateMy WorkMenus.js` file that has been modified to add a **Serena** menu item under the **View** menu on the My Work page. The code that was added to the file is in boldface type.

```
function rtmCreateMy WorkMenuNew()
{
   var menu = new rtmMenuNew();
   var reqMenu = menu.rtmAddTopLevelItemNew("My Work");
   var reqMenuColumn1 = reqMenu.rtmAddColumnNew();
   //Add new menu item that goes to Serena website
   reqMenuColumn1.rtmAddMenuItem("../images/menu_dot.gif", "Serena", "serenaMenu", "Go to
      Serena official website", "../images/menu_dot.gif","../images/menu_dot_gray.gif",
      "http://www.serena.com", false, false, false);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/req_new.gif", "New", "newMenu", "Create
```

```
      new requirement", "../imagesnew/req_new.gif", "../imagesnew/req_new_d.gif",
      "javascript:rtmCvSubmitContentForm('blankForm', null, null, null, true);", false,
      false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/req_edit.gif","Edit", "editMenu", "Edit
      selected requirement", "../imagesnew/req_edit.gif", "../imagesnew/req_edit_d.gif",
      "javascript:rtmCvSubmitContentForm('editForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/req_delete.gif", "Delete", "deleteMenu",
      "Delete selected requirement", "../imagesnew/req_delete.gif", "../imagesnew/
      req_delete_d.gif", "javascript:rtmCvDeleteRequirement();", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/link_create.gif", "Create Link",
      "linkObjectsMenu", "Search for Requirements to be linked to selected Requirement",
      "../imagesnew/link_create.gif", "../imagesnew/link_create_d.gif",
      "javascript:rtmCvSubmitContentForm('linkObjectsForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/import_csv.gif", "CSV import",
      "importObjectsMenu", "Import requirements from CSV document", "../imagesnew/
      import_csv.gif", "../imagesnew/import_csv_d.gif",
      "javascript:rtmCvSubmitContentForm('importObjectsCSVForm', false, 900, 550);",
      false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/import_xml.gif", "XML Import",
      "importObjectsMenu", "Import requirements from XML document", "../imagesnew/
      import_xml.gif", "../imagesnew/import_xml_d.gif",
      "javascript:rtmCvSubmitContentForm('importObjectsForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/import_word.gif", "Word Import",
      "importObjectsMenu", "Import requirements from Word document", "../imagesnew/
      import_word.gif", "../imagesnew/import_word_d.gif",
      "javascript:rtmCvSubmitContentForm('importWordsForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/req_comment.gif", "Add Comment",
      "addCommentMenu", "Add comment to selected requirement", "../imagesnew/
      req_comment.gif", "../imagesnew/req_comment_d.gif",
      "javascript:rtmCvSubmitContentForm('commentForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/poll.gif ", "Create Poll",
      "createPollMenu", "Create poll for selected requirement", "../imagesnew/poll.gif ",
      "../imagesnew/poll_d.gif ",
      "javascript:rtmCvSubmitContentForm('definePollForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/cr_new_2.gif", "Propose New",
      "proposeNewChangeRequestMenu", "Create proposal for a new requirement", "../
      imagesnew/cr_new_2.gif", "../imagesnew/cr_new_2_d.gif",
      "javascript:rtmCvProposeNew();", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/cr_change_2.gif", "Propose Change",
      "submitChangeRequestMenu", "Propose a Change for the selected Requirement", "../
      imagesnew/cr_change_2.gif", "../imagesnew/cr_change_2_d.gif",
      "javascript:rtmCvSubmitContentForm('changeRequestForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/cr_approve_reject_2.gif", "Approve/
      Reject", "reviewChangeRequestMenu", "Approve/reject change requests for selected
      requirement", "../imagesnew/cr_approve_reject_2.gif", "../imagesnew/
      cr_approve_reject_2_d.gif",
      "javascript:javascript:rtmCvSubmitContentForm('reviewCRForm');", false, false,
      true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/more.gif", "", "moreMenu", "Additional
      toolbar buttons", "", "", "javascript:enablemoremenu(1,0);", false, false, true);
   var crMenu = menu.rtmAddTopLevelItemNew("Requirement");
   var crMenu1 = menu.rtmAddTopLevelItemNew("Document");
   var crMenu2 = menu.rtmAddTopLevelItemNew("Traceability");
   document.writeln(menu.rtmGenerateMenuNew());
}
```

Example 2: Adding Two Menu Items to the Additional Toolbar Buttons

The following code example shows an icWebCreateMy WorkMenus.js file that has been modified to add two menu items in the additional toolbar buttons: Google and Yahoo. The code that was added to the file is in boldface type.

```
function rtmCreateMy WorkViewMenuNewMore()
{
   var menu = new rtmMenuNew();
   var reqMenu = menu.rtmAddTopLevelItemNew("My Work");
   var reqMenuColumn1 = reqMenu.rtmAddColumnNew();
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/less.gif", "", "lessMenu", "Previous
      toolbar buttons", "../imagesnew/less.gif", "../imagesnew/less_d.gif",
      "javascript:enablemoremenu(0,0);", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/req_locks.gif", "Requirement Locks",
      "administerLocksMenu", "View and unlock currently locked requirements", "../
      imagesnew/req_locks.gif", "../imagesnew/req_locks_d.gif",
      "javascript:rtmCvSubmitContentForm('administerLocksForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/doc_locks.gif", "Document Locks",
      "DocumnetLocksMenu", "View and unlock currently locked documents", "../imagesnew/
      doc_locks.gif", "../imagesnew/doc_locks_d.gif",
      "javascript:rtmCvSubmitContentForm('DocumentLocksForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/customize_home.gif", "Customize My Work",
      "customizeRTMMy WorkMenu", "Customize content of RM My Work page", "../imagesnew/
      customize_home.gif", "../imagesnew/customize_home_d.gif",
      "javascript:rtmCvSubmitContentFormCommandView('customizeRTMMy WorkForm', true);",
      false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/manage_container.gif", "Manage
      Containers", "manageCollectionsMenu","Create, rename, and delete containers", "../
      imagesnew/manage_container.gif", "../imagesnew/manage_container_d.gif",
      "javascript:rtmCvSubmitContentForm('otherCollectionTasksForm', false, 800, 600);",
      false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/Organize.gif", "Organize by Collection",
      "organizeCollectionsMenu", "Add/remove requirements to collections", "../imagesnew/
      Organize.gif", "../imagesnew/Organize_d.gif",
      "javascript:rtmCvSubmitContentForm('manageCollectionsForm', true);", false, false,
      true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/manage_categories.gif", "Manage
      Categories", "manageCategoriesMenu", "Create, rename, move and delete categories
      (admin only)", "../imagesnew/manage_categories.gif", "../imagesnew/
      manage_categories_d.gif",
      "javascript:rtmCvSubmitContentForm('otherCategoryTasksForm', false, 800, 600);",
      false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/Organize_cat.gif", "Organize by Category",
      "organizeCategoriesMenu", "Move requirements into different category", "../
      imagesnew/Organize_cat.gif", "../imagesnew/Organize_cat_d.gif",
      "javascript:rtmCvSubmitContentForm('manageCategoriesForm', true);", false, false,
      true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/cont_move.gif", "Move Containers",
      "organizeContainersMenu", "Move containers into different category", "../imagesnew/
      Organize_cat.gif", "../imagesnew/Organize_cat_d.gif",
      "javascript:rtmCvSubmitContentForm('manageContainersForm');", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/vert_break.gif", "", "sepMenu", "", "",
      "", "", false, false, true);
   reqMenuColumn1.rtmAddMenuItem("../imagesnew/bline_new.gif", "Baseline",
      "createBaselineMenu", "Create new baseline", "../imagesnew/bline_new.gif", "../
      imagesnew/bline_new_d.gif",
      "javascript:rtmCvShowOnlyDialog('otherCollectionTasksDialogForm',
```

```
        'createbaseline');", false, false, true);
    reqMenuColumn1.rtmAddMenuItem("../imagesnew/cont_compare.gif", "Compare Containers",
        "compareCollectionMenu", "Compare Containers", "../imagesnew/cont_compare.gif",
        "../imagesnew/cont_compare_d.gif",
        "javascript:rtmCvSubmitContentForm('compareCollectionForm',false,450,300);",
        false, true, true);
    reqMenuColumn1.rtmAddMenuItem("../images/menu_dot.gif", "Google", "googlemenuitem",
        "Launch Google", "../images/menu_dot.gif", "../images/menu_dot_gray.gif", "http://
        www.google.com", false, false, true);
    reqMenuColumn1.rtmAddMenuItem("../images/menu_dot.gif", "Yahoo", "yahoomenuitem",
        "Launch Yahoo", "../images/menu_dot.gif", "../images/menu_dot_gray.gif", "http://
        www.yahoo.com", false, false, true);
    var crMenu = menu.rtmAddTopLevelItemNew("Requirement");
    var crMenu1 = menu.rtmAddTopLevelItemNew("Document");
    var crMenu2 = menu.rtmAddTopLevelItemNew("Traceability");
    document.writeln(menu.rtmGenerateMenuNew());
}
```

Changing the Default Settings of the RM Browser Text Editor

The "off-the-shelf" default font size of the RM Browser text editor is 10 points. A Serena-specific setting in the `tinymce_custom.css` file changes this value to 12 points. The `tinymce_custom.css` file is located in the following directory:

`<`*`RM_Install`*`\Common Tools #.#\tomcat\#.#\webapps\rtmBrowser\css\tiny_mce`

NOTE This setting applies to all projects hosted on the server.

For more information about using and customizing the text editor for RM Browser, please refer to the information about TinyMCE found on the Moxiecode Systems AB Web site.

Customizing the Editable Grid

You can customize the look and behavior of the Editable Grid by using JavaScript. This is done by adding JavaScript to the following file on the RM Server:

`Install_Dir\RM\rtmBrowser\jscripts\Extensions.js`

Initially, the `Extensions.js` file is empty. To add a customization, copy the appropriate JavaScript from the example file, paste it into Extensions.js, and then edit it to meet your specific needs. The example file is:

`Install_Dir\RM\rtmBrowser\jscripts\Extensions_example.js`

Using JavaScript, you can achieve the following customizations of the Editable Grid:

- Remove the **Add New Record** button from the Editable Grid toolbar.
- Hide specific columns of the Editable Grid.
- Set specific columns to be Read-Only.

- Set specific cells to be Read-Only/Writable or Mandatory/Optional based upon the value of other cells in the row.
- Limit the items displayed in a Pick List based upon the current value.
- Add buttons that can call other functions, or external links, to populate a cell with data.

See the `Extensions_example.ja` file for commented JavaScript examples of Editable Grid customizations.

Configuring the Expansion and Collapse of RM Browser Sections

You can control whether sections on RM Browser Web pages use a scrolling mechanism to open and close or whether the sections open and close immediately when users click **+** or **-**. If you want the sections to scroll, you can specify the speed of the scrolling.

You configure this functionality using the `animationspeed` option in the `default.xml` file, which is located in the following location:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\forms\common

You can also configure this functionality in custom Web forms.

By default, the scrolling speed is set to 0, and is set on the root form element in the `default.xml` file. When the `animationspeed` option is set on the root form element, it affects all sections. For an example of the option set on the root form element, see item 1 in the illustration under "Template Layout" on page 159.

To set different scrolling speeds for sections, set the `animationspeed` option on the individual section. For example:

```
<section type="standard" label="Standard Attributes" animationspeed="0"
    />
```

To set no scrolling, set the `animationspeed` option to 0.

Creating Custom Login Alert Pages for RM Browser

You can optionally require users to review and accept an alert page before displaying the RM Browser client. When you do this, users are presented with the page after entering their login credentials. Once they accept the page, the RM Browser client appears. This is a useful way to communicate important new information to users before they use RM Browser. You can change this as often as needed.

To configure a custom login alert page for RM Browser:

1 Create either or both of the following files in the following directory on the RM server:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser

- If your users use Internet Explorer: warning.html (make sure that the file extension is .html, **not** .htm)

- If your users use Firefox: warning.txt

2 Add the text to these files. If you used Microsoft Word to edit the HTML file for Explorer, you must save as a Web Page, Filtered to ensure that any Microsoft Office tags are removed. A true HTML editor is recommended.

Customizing Headers and Footers on the Main Pages of RM Browser

You can customize the header and footer of the main pages of the RM Browser interface. This allows you to add your company name, logo graphic, etc.

CAUTION! Any elements you add must fit into the existing space. Modifications beyond the space available may corrupt the layout of the interface and are not supported.

To customize RM Browser headers and footers:

1 Make a backup copy of the `spring.xml` file. It is on the server in the following location:

RM_Install\Common Tools *#.#*\tomcat*#.#*\webapps\rtmBrowser\WEB-INF

2 Open the spring.xml file in a text editor.

3 Find the section near the end of the file that starts with this text:

```
<bean id="rmHeaderAndFooterText" class="com.serena.rm.customization
    .text.CustomizedHeaderAndFooter">
```

4 Remove the opening (`<!--`) and closing (`-->`) comment tags from around that entire bean statement.

5 If you do not want to customize both the header and the footer, comment out the *entire* property statement of the one you wish to leave unchanged.

6 In the relevant `<property name="plainText">` statement, replace the placeholder text (*Customizable Header Text* or *Customizable Footer Text*) with your custom text.

IMPORTANT! Plain text only. Do not include any tags or markup.

7 In the relevant `<property name="style">` statement, modify the CSS as needed.

IMPORTANT!

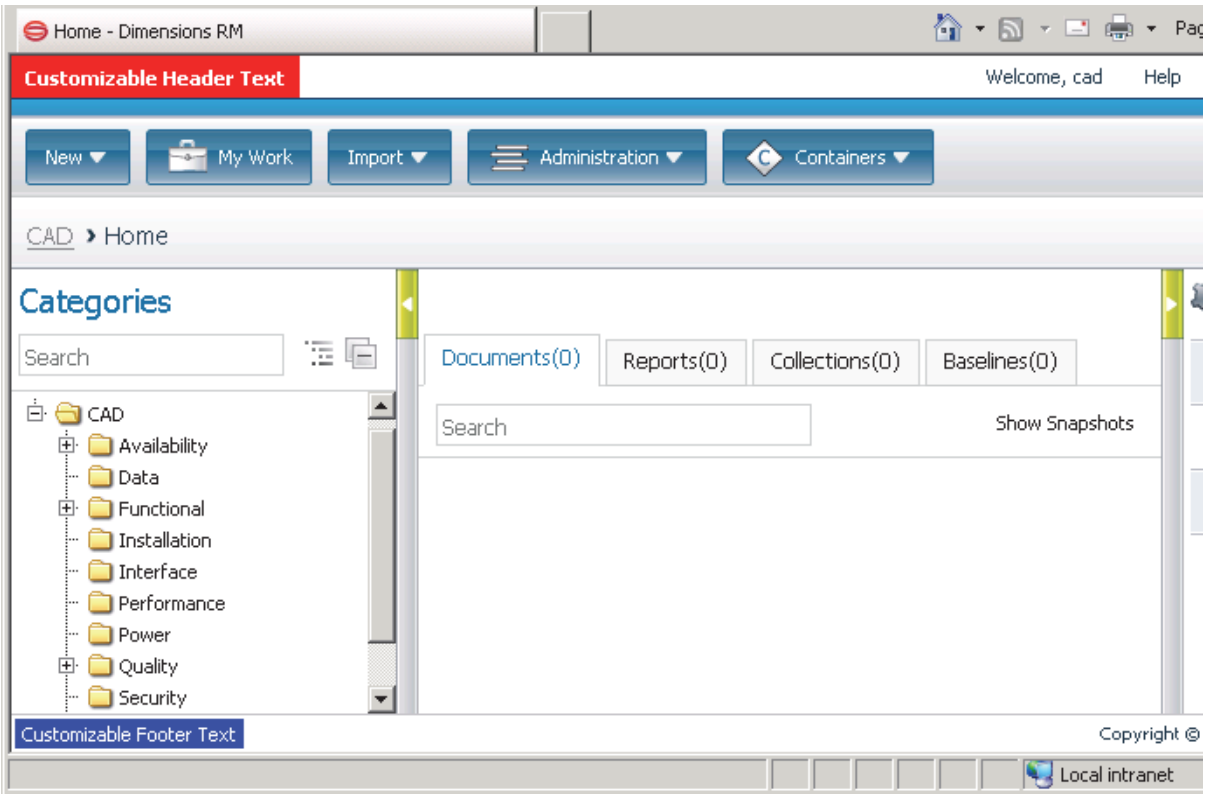
- Any elements you add must fit into the existing space. Modifications beyond the space available may corrupt the layout of the interface and are not supported.
- Do not include quotation marks (") in your style statements.

TIP You can incorporate an image by using the CSS *background* property. For example, to set the background to green and place a single instance of an image to the left:

```
background: #00ff00 url(logo.gif) no-repeat fixed left;
```

8 Save the file and restart RM's Tomcat (Serena Common Tomcat).

The following screen shot shows the location of the custom header and footer using the example included in the file.



Chapter 10

Script Syntax

Overview

Scripts contain commands for extracting data from the Serena® Dimensions® RM database and for formatting the results. This appendix describes the syntax of the Dimensions RM script language. If you are familiar with SQL, you will note the similarity between that standard language and the variant of it that has been tailored specifically for Dimensions RM.

IMPORTANT! The Dimensions RM scripting language is **NOT** SQL. Though *similar* to SQL, it is in fact unique to Dimensions RM. Please read this chapter to understand its usage.

The RM scripting language:

- Is an interpreted language. This helps to prevent SQL injection attacks.
- Uses a database meta model so class names are *not* real database table names.

NOTE The script generator wizard embedded in RM Concept and RM Explorer cannot generate some legal scripts. This section describes the full language and identifies the script generator limitations. In many cases, scripts work equally well interactively and from the command line with doc_out. There are some cases, however, such as with variables and prompts, in which a script can only be used in one context. For example, scripts that reference variables cannot be used interactively; scripts that use prompts cannot be used from the command line.

A Dimensions RM reporting script contains commands that tell Dimensions RM what data to extract from the project and how to format it. The following types of commands can be included in a script:

- SELECT defines the data (object attributes) to be extracted.
- CALCULATE performs computations based on the extracted data.
- XREF controls cross references that follow links between objects.
- PLUS concatenates SELECT statements.
- COMMENT provides descriptive information that is not interpreted by Dimensions RM.

NOTE You cannot save a script unless you have the "Create" permission for scripts

SELECT Statement

For those familiar with SQL (Structured Query Language), the SELECT statement in a script appears similar in many ways to the SQL SELECT statement.

A SELECT statement may contain the following elements (mandatory elements are indicated in bold print):

- The reserved word SELECT

- A list of display elements (attributes) each preceded by a <DTPtag>. The DTPtag specifies a column heading for tabular displays or, when the script results are saved in a formatted file, a paragraph style or format for desktop publishing tools. At least one attribute must be selected. If you do not want a column header or a paragraph style, you must indicate that with empty delimiters, as in <>.
- The reserved word FROM
- The RM class name
- The reserved word WHERE
- Conditions under which to make the extraction
- The reserved words ORDER BY
- A list of fields by which to order extraction
- Metrics computations to be performed

Note the format of this statement – SELECT <>'attribute' FROM 'class'. The display attributes must be preceded by the characters '<' and '>'. If these characters are not present, the attribute is not included in the report document.

A SELECT statement may contain as many display elements as required, but each element must be defined as an attribute of the given class. You can view the class definition by invoking Class Definition from the RM Concept or RM Explorer Tools menu.

For example:

```
SELECT <>TEST_ID <>TEST_DESCRIPTION <>TEST_NOTES <>REQUIRED_RESULT
FROM TEST
```

This SELECT statement produces a list of all the objects of class TEST in the Dimensions RM database, in Dimensions RM key order. The test identifier, description, notes, and required result attributes appear in the output in the same order as they appear in the display list.

```
SELECT <Requirement ID>REQ_ID <Status> STATUS <Text>Text FROM
CustomerRequirements WHERE STATUS != 'Deleted' ORDER BY STATUS
```

This select statement produces a list of all objects in class CustomerRequirements that have not been deleted. The list is intended for tabular output on the screen or in a CSV file, so the column headings are included. The result will be ordered by the STATUS attribute value in alphabetical order.

DTPtag

You can specify a DTPtag for each attribute in your report to control output formatting. For tabular output, the DTPtag is used as a column heading. For document format, such as RTF, the DTPtag is used to identify a paragraph style to be associated with the attribute value. The tag name is placed between the < and > characters that precede a display list element. The tag name may be up to 19 characters in length.

The tag name can only include the '#' character if it is preceded by a backslash (\).

When used with a table, the tag name appears as the column heading, with a column width determined by Dimensions RM. You can specify the column width by preceding the tag with '!n', where n is the desired column width in characters. Column widths are not supported in the script generator wizard.

For example (DTPtags are shown in **bold**):

```
SELECT !8<Test ID>TEST_ID !25<Description>TEST_DESCRIPTION
!25<Test Notes>TEST_NOTES !25<Results>REQUIRED_RESULT FROM TEST
```

DTP_TEXT Display Item

Dimensions RM supports a display list element, called DTP_TEXT, which does not correspond to an attribute. For tabular output, DTP_TEXT can be used to insert a blank column into the output. For document output, its purpose is to insert a "blank" component tag (that is, a DTP tag with no text or data attached). This enables the inclusion into documents of headers and footers, and repeated text strings.

As many DTP_TEXT items as desired may be included in the display list, and their position within the display list is significant.

For example, to separate each TEST record in a list with a marker (for example, a separator line):

```
SELECT <Test ID>TEST_ID <Description>TEST_DESCRIPTION <Test
Notes>TEST_NOTES <Result>REQUIRED_RESULT <separator>DTP_TEXT FROM
TEST
```

Within RM Word, the tag separator must be defined to produce a paragraph of the required type, for example, a line of hyphens or asterisks.

RTM_KEYWORD Display Item

Dimensions RM supports another display list item that does not correspond to an attribute. Use RTM_KEYWORD to request Dimensions RM to return a list of linked collections for each object. For example:

```
SELECT <Test ID>TEST_ID <Description>TEST_DESCRIPTION <Test
Notes>TEST_NOTES <Result>REQUIRED_RESULT
<Linked Collections>RTM_KEYWORD FROM TEST
```

WHERE Clause

For many reporting purposes, only a subset of the objects in a class is required. The WHERE reserved word is used in conjunction with a SELECT statement to specify selection constraints in terms of attribute values, collection membership, or relationship linkages. The WHERE clause syntax is of the general form:

```
WHERE ConditionalExpression
```

where ConditionalExpression is a logical expression whose elements are of the form:

- AttributeName Operator Valuelist
- Direction Relationship
- Group {in | not in} (collectionList)
- SpecialConstraint

The elements of a conditional expression are combined using the logical operators AND and OR. Any number of conditions may be applied to a SELECT statement which can be

combined using the reserved words AND and OR. Both AND and OR have the same precedence and are left associative. Parentheses may be used to change the precedence.

AttributeName Operator Valuelist

This constraint form is commonly used to match specific values for an attribute. The following table describes attribute types used in Dimensions RM project schemas. For operators such as IN and NOT IN, a list of values may be supplied. The list is enclosed in parenthesis, and each element is enclosed in single quotation marks.

Attribute Type	Operators	Notes
Action	INITIALIZED, NOT INITIALIZED, =, !=	
Alphanumeric	=, !=, <, >, <=, >=, INITIALIZED, NOT INITIALIZED, in, not in	Mathematical operators apply to ASCII sort order
Date	=, !=, <, >, <=, >=, INITIALIZED, NOT INITIALIZED, IN, NOT IN	Mathematical operators apply to DATE sort order
Graphic		Not supported
List	INITIALIZED, NOT INITIALIZED, IN, NOT IN	
Numeric	=, !=, <, >, <=, >=, INITIALIZED, NOT INITIALIZED, IN, NOT IN	Mathematical operators have their normal mathematical meanings.
Text	INITIALIZED, NOT INITIALIZED, LIKE, NOT LIKE, IN, NOT IN	The * character is a wildcard for any set of characters. The % character is a wildcard for a single character. **NOTE:** The * character is only valid as a wildcard when doing direct equality (LIKE) or inequality (NOT LIKE) tests.

Following are `AttributeName Operator Valuelist` examples.

- `TEST_ID > '7'`

  Finds objects with a TEST_ID attribute value greater than 7

- `REQUIREMENT_STATUS IN ('Provisional','Approved','Rejected')`

  Finds objects with a REQUIREMENT_STATUS attribute value of Provisional, Approved, or Rejected.

- `TIME_MODIFIED >= '01-SEP-2000'`

  Finds objects with a TIME_MODIFIED attribute value greater than the first of September, 2000.

- `OWNER_NAME LIKE '*Fred*'`

  Finds objects with an OWNER_NAME attribute that contains the substring Fred.

Direction Relationship

This constraint form is used to identify linked objects within a particular relationship. For example, given a relationship between classes `SystemRequirement` (the primary class) and `Test` (the secondary class), you could search for system requirement objects that are linked to test objects. Alternatively, finding those that are not linked can help you identify work that is yet to be completed. The following "directions" are defined:

- `PRIMARY_IN`
- `NOT_PRIMARY_IN`
- `SECONDARY_IN`
- `NOT_SECONDARY_IN`

These operators are used to extract only those objects which have links (or not) in a named relationship, and can therefore be used to create 'compliancy' lists (such as a list of tests which have or have not been linked to requirements)

Following are Direction Relationship examples (based on a relationship named `Tested_By` with `SystemRequirements` as the primary and `Test` as the secondary class).

- `PRIMARY_IN Tested_By`

  Finds `SystemRequirements` that are linked to at least one `Test` object.

- `NOT SECONDARY_IN Tested_By`

  Finds `Test` objects that are not associated with any `SystemRequirement` objects

For `SELECT` statements involving requirements, there are two pre-defined relationships that may also be used. These are `SOURCE` and `IMMEDIATE`. The effect of using each of the relationship operators with each of the `SOURCE` and `IMMEDIATE` relationships is described in the following table.

Operator	IMMEDIATE	SOURCE
PRIMARY_IN	Requirements that have children (not the lowest level requirements)	Requirements that have no parents (the source requirements)
SECONDARY_IN	Requirements that have parents (derived requirements)	Requirements that have no children (the lowest level requirements)
NOT_PRIMARY_IN	Requirements that have no children (the lowest level requirements)	Requirements that have parents (derived requirements)
NOT_SECONDARY_IN	Requirements that have no parents (the source requirements)	Requirements that have children (not the lowest level requirements)

`Group {in | not in} (collectionList)`

This constraint form is used to identify objects with respect to their linkage to one or more collections. For example, you can define collections to help you manage prioritization. A parent collection, named Priorities could have child collections named Priority 1, Priority 2, and so on. You can use these collections to organize reports focused on specific priorities or to find items that have yet to be prioritized:

Following are collection constraint examples.

- `GROUP IN ('Priority 1', 'Priority 2')`

  Finds objects linked to either Priority 1 or Priority 2 collections.

- `GROUP NOT IN ('Priorities')`

  Finds objects not yet prioritized.

SpecialContraint

This constraint form supports built-in attributes of classes based on the requirement class type. These classes include built-in text attributes named Query and Clarification, which are intended for use with questions and answers to do with the requirement itself. The SpecialConstraint keywords listed below take no additional operands:

- `HAVING_CLARIFICATION_TEXT`
- `HAVING_NO_CLARIFICATION_TEXT`
- `HAVING_QUERY_TEXT`
- `HAVING_NO_QUERY_TEXT`

Following is a `SpecialConstraint` example:

- `SELECT <Requirement ID>REQ_ID <Status> STATUS <Text>Text FROM CustomerRequirements WHERE HAVING_QUERY_TEXT`

  Finds identifier, status, and text from objects of class `CustomerRequirements` with non-empty `Query` attribute.

Variables

Variables can be used when running scripts from the command line, using doc_out,to allow the same script to be used for different values. Variables are not supported in the script generator wizard except when used in conjunction with prompting (see "Prompting" on page 187).

For example:

```
SELECT <>TEXT FROM REQS WHERE REQUIREMENT_KEY = REQ_KEY_VALUE
```

The value of `REQ_KEY_VALUE` may be supplied from the command line for each execution of the script. The name of the variable must be given in upper case.

Prompting

Scripts can also contain specially formatted prompts that will be displayed when the script is run interactively (using RM Concept) to prompt users for information. The syntax for prompting in scripts is:

```
<#prompt#> anywhere in the script. For example: select <id>object_id
from ECP where object_id = '<#enter id#>'
```

This prompting syntax also allows for prompted values to be used as variables in multiple places within a script. For example:

- `select <id>object_id from CR where object_id='<#enter id^var1#>' xref`
- `select <id>object_id from SR where object_id='<#^var1#>`

The value entered by the user for the object ID of the CR class will also be used in the where clause of the SR class select. The "^" indicates that the value should be stored into the variable following the "^" and that variable name can be used without a prompt elsewhere. If a second prompt ^ variable name is found with the same variable name, the variable's value will be changed.

ORDER BY Clause

The ORDER BY clause can be added to the SELECT statement to specify the order in which the records should be returned. The ORDER BY clause is added after the WHERE clause or after the class name if no WHERE clause is included. The reserved words ORDER BY must be followed by a comma separated list of attributes.

Examples:

- SELECT <>TEST_SETUP FROM TEST ORDER BY TEST_ID, TEST_DATE
- SELECT <>TEST_SETUP FROM TEST WHERE TEST_ID = '7' ORDER BY TEST_DATE, REQUIRED_RESULT

Any number of attributes of a class can be used to qualify the order of extraction. The ordering is achieved in ascending order. When the ORDER BY attribute has a NULL value, it is placed at the end of the list (that is, it is considered to have the highest value).

It is common for reports to be ordered by attributes that have a Dewey decimal format (1.2.3.12). Often the PARAGRAPH_ID attribute will have this kind of format. A straightforward ASCII sort on these codes will not return a correct order, since it is performed on a character-by-character basis, rather than by the numbering.

A Dewey decimal code needs to have letters (upper or lower case) and numbers separated by a decimal point or a hyphen. The following examples are legal Dewey decimal codes:

- 1.2.5
- a.b
- 3
- d
- d-1-2

There is no restriction on the length of the code.

To perform a Dewey decimal ordering, precede the appropriate attribute with the @ symbol.

For example:

```
SELECT <>REQUIREMENT_KEY <PID>PARAGRAPH_ID <Text>TEXT <Query>QUERY FROM
REQ WHERE SOURCE_DOCUMENT = 'doc1' AND HAVING_QUERY_TEXT ORDER BY
@PARAGRAPH_ID
```

CALCULATE Statement

Metrics can be performed upon select statements in scripts run from doc_out. RM Concept does not display the results of the CALCULATE statement. The available calculations are as follows:

- A **count** of records selected on any field
- The **total** of the values of records selected on numeric fields
- The **average** value of records selected on numeric fields
- The **minimum** value selected on numeric fields
- The **maximum** value selected on numeric fields
- **Normalization** of values selected by a simple arithmetic expression

The results of the count, total, average, minimum and maximum metrics are displayed at the bottom of the report. Normalization causes each record value in the body of the report to be changed according to the arithmetic expression.

NULL fields are handled in two ways:

- If only records with values in them are to be used (POPULATED), the NULL fields are ignored (this is the default)
- If all records are to be used regardless of their content (ALL), NULL fields are treated as having the value 0 (zero).

The format of the CALCULATE statement is as follows:

- The CALCULATE keyword appears first to indicate that metrics will be performed.
- A list of calculation types (COUNT, TOTAL, AVERAGE, MINIMIZE, MAXIMIZE or NORMALIZE) and the fields applicable (the fields should be separated by commas).
- Each calculation type keyword can be prefixed by an ALL or POPULATED flag. If none is supplied, the default of POPULATED is used.

For TOTAL, COUNT, AVERAGE, MINIMUM and MAXIMUM:

- The field name should be prefixed by a mandatory "tag" in the format [string] which defines a string to be used in the report to identify that particular value. Note that [] is valid.
- Each separate [tag] field entry in the list may be prefixed by the ALL or POPULATED flag.

For normalization:

- Each entry has the form "fieldname operator value", where operator is any of '+', '-', '*', '/' and value is a real or integer number. No tags are applicable for normalization.
- Each separate [tag] field entry in the list may be prefixed by the ALL or POPULATED flag.

For example:

```
SELECT <number>PARTS_AVAILABLE FROM REQ
CALCULATE COUNT [count]PARTS_AVAILABLE
TOTAL [total]PARTS_AVAILABLE
```

```
AVERAGE [average]PARTS_AVAILABLE
MINIMIZE [min]PARTS_AVAILABLE
MAXIMIZE [max]PARTS_AVAILABLE
```

To modify the values of the attribute PARTS_AVAILABLE in the report, you can use the NORMALIZE metric:

```
SELECT <id>REQUIREMENT_KEY <number>PARTS_AVAILABLE FROM REQ CALCULATE
NORMALIZE ALL PARTS_AVAILABLE + 5
```

XREF Statement

The XREF statement lets you show the linkage or traceability between objects. XREF links the SELECT statement, immediately following it with a previous SELECT statement.

The XREF statement must contain the reserved word XREF and the name of the relationship that defines the traceability. It may also contain the reserved words PRIMARY, SECONDARY, PRIMARY_HISTORY, SECONDARY_HISTORY and either FIRST, SECOND, THIRD, FOURTH, or a number.

If both SELECT statements select from the same class, then the XREF statement must be modified with either the PRIMARY or SECONDARY reserved words. Use PRIMARY if the second SELECT statement refers to the primary side of the relationship. Use SECONDARY if the second SELECT statement refers to the secondary side of the relationship.

NOTE The script generator wizard does not support the reserved words PRIMARY_HISTORY, SECONDARY_HISTORY, FIRST, SECOND, THIRD, and FOURTH, and the use of a number to refer to SELECT statements.

The XREF statement must appear between two SELECT statements, the latter of which must be for a class defined to be a member of the relationship named in the XREF statement. Also required is that at least one of the SELECT statements preceding the XREF statement must concern the other class named in the relationship.

For example, suppose a relationship has been defined called REQ_TEST that links the REQ class of type requirement (as the PRIMARY object in the relationship) to a class called TEST (the SECONDARY object), and traceability links have been created between objects in the classes. A list of requirements showing their related TESTs can be created using:

```
SELECT <ID>REQ_ID <>TEXT FROM REQ WHERE STATUS='CURRENT'
XREF REQ_TEST
SELECT <TEST ID>TEST_ID <>TEST_DESCRIPTION FROM TEST
```

This script produces a list of every requirement from the REQ class where the STATUS attribute has the value "Current", and if a requirement participates in the relationship REQ_TEST, its corresponding TESTs are extracted. Note that this form of the script extracts each of the requirements that match the condition, then the TESTs that are linked to them. If the condition was such that more than one requirement complied, and a TEST is linked to more than one requirement, it may appear more than once in the output.

To list only those requirements that are related to TESTs, append a condition as follows:

```
SELECT <ID>REQ_ID <>TEXT FROM REQ WHERE STATUS='CURRENT'
AND PRIMARY_IN REQ_TEST
```

```
XREF REQ_TEST
SELECT <TEST ID>TEST_ID <>TEST_DESCRIPTION FROM TEST
```

The PRIMARY_IN operator has been used since REQ was defined as primary in the REQ_TEST relationship.

Using the NOT_PRIMARY_IN operator:

```
SELECT <ID>REQ_ID <>TEXT FROM REQ WHERE STATUS='CURRENT'
AND NOT PRIMARY_IN REQ_TEST
XREF REQ_TEST
SELECT <TEST ID>TEST_ID <>TEST_DESCRIPTION FROM TEST
```

This produces a list containing only requirements, since any requirement not related to any TESTs, by definition will not cause any TESTs to be extracted.

The following script poses a problem:

```
SELECT <original>REQ_ID FROM REQ XREF REQ_TEST SELECT
<test>TEST_DESCRIPTION FROM TEST XREF SOURCE SECONDARY SELECT <low
child>REQUIREMENT_KEY FROM REQ XREF REQ_EVENT SELECT
<events>EVENT_TEXT FROM EVENT
```

It is valid (providing the objects, attributes, and relationships have been defined), but the third XREF statement (XREF REQ_EVENT) implies the class named in the next SELECT statement (EVENT) must be linked in the relationship REQ_EVENT. Since the relationship links REQs to EVENTs and the next class is EVENT, they must be linked to REQs in a previous SELECT statement.

The script contains two instances of REQ in SELECT statements (SELECT statements 1 and 3). **By default, the first SELECT statement for a matching class is used.** So in the example the EVENTs are those linked to the first set of REQs (the original requirements).

There are four reserved words that allow you to choose where the linkage must exist in the event of duplicity of objects in the script:

- FIRST
- SECOND
- THIRD
- FOURTH

NOTE These reserved words are for compatibility with earlier versions of RM, but they are not supported in the script generator wizard.

The reserved words express the number of the SELECT statement to which the next SELECT statement is linked. One of these reserved words may appear as the final word in an XREF statement. It may be necessary to refer to a SELECT statement later in the script than the fourth one. This can be specified using a positive integer.

To change the previous script so that the EVENTs linked to the source REQUIREMENTs are displayed, append the reserved word THIRD or the number 3 to the final XREF statement.

```
SELECT <original>REQUIREMENT_KEY FROM REQ XREF REQ_TEST SELECT
<test>TEST_DESCRIPTION FROM TEST XREF SOURCE SECONDARY SELECT <low
child>REQUIREMENT_KEY FROM REQ XREF REQ_EVENT THIRD SELECT
<events>EVENT_TEXT FROM EVENT
```

The final XREF statement now means the class named in the next SELECT statement (EVENT) must be linked in the relationship REQ_EVENT to the objects extracted by the third SELECT statement. Since the relationship REQ_EVENT links REQs to EVENTs and both are represented in the SELECT statements, this is a valid script and produces the desired output.

PLUS Statement

The PLUS statement can be used to join multiple scripts into one script. The outcome of the extraction using the resultant script is multiple reports produced in one data extraction run. RM Concept does not display the results of a PLUS statement.

For example:

```
SELECT <4.1_Title>DTP_TEXT <>TEXT FROM REQ WHERE
PRIMARY_IN IS_ALLOCATED TO HARDWARE
PLUS SELECT <4.2_Title>DTP_TEXT <>TEXT FROM REQ WHERE
PRIMARY_IN IS_ALLOCATED_TO_SOFTWARE
PLUS SELECT <4.3_Title>DTP_TEXT <>TEXT FROM REQ WHERE
PRIMARY_IN IS_ALLOCATED_TO_MANUAL_OPERATION
```

COMMENT Statement

You can use comments to provide documentation within scripts to be used from the command line. The script generator wizard does not support comments. Comments can be inserted into a script in several formats:

- Characters after ##, -- or $! are ignored until the start of a new line.
- Multiple line comments can be enclosed within pairs of comment delimiters {}, /* */ or (* *).

For example:

```
/* Version 1.0
Date: 14th May 2006*/
SELECT <key>REQUIREMENT_KEY ## extract RMs no.
FROM REQ-- for the req class
WHERE SOURCE_REQUIREMENTS = 'Y'$! of all original requirements
{Now find all derived requirements}
XREF SOURCE SECONDARY
(* and extract the RM nos *)
SELECT REQUIREMENT_KEY FROM REQ
```

Glossary

Accept	A command that accepts a proposed change. The current status of the proposed requirement becomes "accepted," and a copy of the requirement is created with the Current Status of "current."
accepted	Current Status of a change request that was accepted.
access rights	The set of tasks that can be performed on a resource by a user.
action attribute	A pointer to a file that is held internal or external to Dimensions RM, and indicates the method of accessing the file.
alias	A set of keywords defined as variants or synonyms of a main keyword. For example, aliases of the keyword "calibrate" might be "calibrated," "calibrating," or even the wild card string "cal*". Unlike pseudonyms, which exist only while a particular Dimensions RM tool is active, aliases exist for the duration of the project or until they are deleted.
alphanumeric attribute	An attribute that represents one line of alphanumeric text, such as the title of an acceptance test. It can be up to 1000 characters in length.
alphabetic sort	A simple alphabetical sort. Contrast with *numeric sort*.
attribute	Information that is logically associated with a class of information to further specify the information content. See also *class attribute*, *evaluated attribute*, *implicit attribute*, *relationship attribute*, *user-defined attribute*.
attribute constraint	A rule that permits a link to be created only if some attribute of the primary or secondary object obeys a specific constraint. See also *primary object*.
attribute type	The nature or data type of an attribute: alphanumeric string, free text field, and date.
audit trail	An historical trace of the various versions of requirements that lets you reconstruct requirement evolution. The Visual Network tool lets you view the audit trail graphically.
auto link	A utility that lets you create or break links between objects of the primary and secondary class in the selected relationship.
baseline	A stable, unchangeable group of requirements. Baselining a collection ensures that the collection will never change.
batch capture	A method of capturing objects that is performed using the batch capture utility in RM Word. This method is particularly suitable for capturing requirements from large and structured documents. See also *manual capture*.
baseline lock	A lock on a specific version of an item that indicates that the version is part of a baseline and thus cannot be modified.

batch update A utility that lets you change attribute values for all requirements that match a set of attribute constraints for any one class defined in the project schema.

capture The process of capturing an object when it is extracted from the original source document and entered in the Dimensions RM database. See also *source document*.

category A method for organizing objects so you can create views of requirements, scripts, and filters for a subset of users. A requirement can belong to only one category.

cardinality rule A rule that specifies the maximum number of links that can lead to and from primary or secondary objects. For example, a cardinality of 2:3 means that no more than two links can lead to a secondary object, and no more than three to the primary object.

change request A proposal to change one or more requirement attributes.

child collection Object hierarchies are created from the top down, from parent to child, while collection hierarchies are created in the opposite direction, by grouping child collections to form a parent collection, and so on. A child collection may be directly linked to an object. When a collection is created, it is a child collection by default.

child database Used in the context of database partitioning only. Contrast with *parent database*.

child object Whenever an object is edited and replaced, a new object is produced. The original object is called the parent object, and the new object is its child object. If this process is repeated, a child can itself be a parent of another child.

class A container for related types of information. After classes are defined, requirements are entered or captured into the class.

class attribute A property of a class, as defined by the project administrator, that further breaks down the information in the class. By specifying attributes for a class, the project administrator can define the exact nature of the information represented by the class. This allows Dimensions RM users to make complex searches on their project information. Without defined attributes, classes model information at only a relatively high level of abstraction and lack internal detail. In such cases, the resulting diagram simply shows an overview of the abstract data types pertaining to the project, together with their interdependencies.

class definition The initial Dimensions RM information modeling procedure the project administrator uses to configure Dimensions RM with respect to the information to be generated and traced within the project. This is represented graphically as a class definition diagram.

class definition diagram A graphical representation of the information classes that exist in a project, along with the relationships between the classes.

Class Definition A Dimensions RM tool that lets users with special privileges (such as project administrators) define various classes of information, attributes of those classes, and the relationships between the classes. By specifying the project structure in this way, a class definition both constrains and supports the systems engineer in the way that instances of classes, attributes and relationships can be created during the lifetime of the project. Systems engineers and other ordinary users can use Class Definition to view the class definition diagram for the project. See also *class definition diagram*.

CM Lock Configuration Management Lock. A security feature that makes objects read-only and stops them from being updated. You can lock requirements, collections, and documents.

collection A way to group requirements of any class. Once a collection is created, it can be associated with a requirement by linking the requirement to the collection. Each requirement can be linked to many different collections, and each collection can be linked to many different requirements. Parent collections contain child collections. Child collections contain requirements. Parent collections are not directly linked to any requirements, only linked indirectly through their child collections. See also *baseline*.

collection linkability An occurrence of the association defined by a relationship. It connects two objects.

command line tools Dimensions RM tools (doc_out) that let you to run scripts from the DOS prompt. Doc_out lets you run a Dimensions RM reporting script to generate output to a variety of formats. With doc_tool, you can prepare scripts before extraction for batch processing of reports.

compliance check A process in which Dimensions RM searches the database and produces a report specifying which objects do not contain links across a defined relationship.

compliance report A report that lists requirements that are or are not linked to objects in the other class in a relationship. A full compliance report lists all requirements in the primary and secondary class, whether or not they are linked to each other. A compliance-only report lists either all matching requirements in the primary class that have links to matching requirements in the secondary class, or all matching requirements in the secondary class that have links to matching requirements in the primary class. A non-compliance report lists either all matching requirements in the primary class that have no links to matching requirements in the secondary class, or all matching requirements in the secondary class that have no links to matching requirements in the primary class.

CSV import A utility that lets you import data from a comma separated value file into the Dimensions RM project database.

current Current Status of a requirement that is the most recent or current version.

Current Status A special implicit attribute that identifies the state of a requirement.

cyclic relationship Relationship in which the relationship points from one class back to the same class.

database In the Dimensions RM environment, an instance of Oracle. The databases that are displayed in the Dimensions RM tools are determined by the contents of the `tnsnames.ora` file (an Oracle file).

database partitioning The division of project data between a contractor and subcontractors. This is used for large projects undertaken by several groups or organizations. The original objects are retained in the main contractor's parent database, and allocated objects in the subcontractor's child database.

date attribute A user-defined attribute type that stores values that are based on user-defined date formats.

Delete A command that changes the Current Status of a requirement to "deleted," but leaves the requirement in the project.

deleted Current Status of a requirement that was deleted. A deleted requirement remains in the project. The prior version of the requirement, if any, receives a status of "current."

derivation The analysis process in which an object is changed or translated into a form suitable for lower-level analysis and design.

derived object A lower-level object that is necessary for the implementation of a higher-level object. When an object changes form, it becomes a derived object. In general, a derived object is directed toward some sub-element and is more specific than the original object.

Dimensions RM A suite of multi-user, configurable tools that support the capture, management, traceability and documentation of systems engineering information.

Dimensions RM project administrator The person responsible for maintaining the data that is accessible to a particular project. This includes using the Class Definition tool to implement the information model and, in some cases, the Database Management Utility to manage project information.

Dimensions RM third-party integrator Person responsible for using the API functions to integrate third-party tools with Dimensions RM.

doc_out A command line tool that lets you run a reporting script and generate the output to a variety of formats.

Doctool A Dimensions RM tool that interprets a documentation script and generates an on-screen report.

document In the Documents View perspective in RM Browser, a hierarchical arrangement of chapters and requirements that can be edited. You can create a document from within Documents View or open one that was imported by the RM Import tool. From Documents View, you can publish a document as a Microsoft Word document.

Documents View An RM Browser view that provides a document-like presentation of requirements, with a table of contents, chapters, and subchapters. Requirements are contained within the chapters and subchapters. Document View allows you to easily add, delete, move, and edit chapters and requirements. Microsoft Word documents that you imported through RM Import are displayed in Document View. You can easily add, delete, move, and edit chapters and requirements from the imported Word document in Document View. See also *Requirements View*, *My Work View*, *Traceability View*.

ECP Engineering Change Proposal. A class type. As you create a set of related proposed requirements, you can link them to an ECP object so that they are easily accessible for review as a group.

e-mail notification A feature that lets you register interest in certain types of changes within the project data and to receive electronic notices of those changes.

evaluated attribute An attribute that takes its value from the external environment. Such an attribute can be specified as the default value for alphanumeric, numeric or date attributes. At run time, the specified script or command is executed and the resulting value is set for the attribute.

expanding A process in which a single parent object is edited to produce one or more child objects.

export utility A utility that can be used to back up a project or database. In the context of database partitioning, it generates a data partition package containing all the data and external files associated with a data partition. The package can be created as a collection of files in a single directory or as a single file, ready for transfer to the destination site.

file attachment attribute A user-defined attribute type that holds a single file that can be accessed through RM Browser

filter A query against a single class. Form filters are the simplest kind of filter, but they are limited in terms of the complexity of the selection criteria. Complex filters provide greater expressive power for the selection criteria. With complex filters, you can construct detailed logical expressions that use attribute values, ranges of attribute values, and membership in relationships as selection criteria. Contrast with *script*.

flowdown A systematic process in which objects are decomposed into allocated and derived objects, and then assigned to low-level model components. This flowdown process generates a hierarchical structure of refined objects derived from the objects captured for the system.

focusing A process in which two or more parent objects are edited to produce a single child object.

form A structure that displays requirement information for classes and relationships. A form is created for each class and relationship. You can create new forms by customizing the form that Dimensions RM generates, and can designate any form to be used as the default form.

form view In RM Browser and RM Concept, a view that displays requirements one at a time. From the form view in RM Browser and RM Concept, you can edit requirement attributes. From the form view in RM Concept, you can also find objects.

genealogical links Links between parent objects and child objects, or between parent collections and child collections.

generic links Links that must span a relationship.

graphic attribute A user-defined attribute type that holds either graphic images or OLE data captured from RM Word. See also *OLE*.

grid view In RM Browser and RM Concept, a view that lets you view multiple requirements in a table-like list. The column headings represent attributes of the requirements.

group A collection of individual users grouped into a functional category. Access rights can be assigned to a group and all members of the group. If users have been assigned to a project through a group, they inherit the group access rights, unless they have been explicitly granted or denied access.

group attribute A group attribute is like a list attribute in that it provides a predefined list of values for user selection. But unlike a simple list attribute, a group attribute is composed of a series of sub attributes. The choices available to the user depend upon the selections they made in the higher level, or parent, attributes within the group attribute.

My Work View An RM Browser view that you can customize to include up to seven expandable sections. Each section contains the results of a query. RM My Work allows you to quickly view and modify requirements that you refer to on a regular basis. See also *Documents View*, *Requirements View*, *Traceability View*.

immediate child The object that was created when the original object was replaced, focused, or expanded. Immediate children are the next version of objects in the line of descent and may be current objects or objects with another status.

immediate parent The object that was used to create the currently selected object. Parent objects never have a status of "current."

immediate relationship A relationship that refers to the immediate predecessor or successor of an object. Contrast with *source relationship*.

implicit attribute An attribute that is used to maintain the integrity of project information. Implicit attributes include intrinsic information such as the project unique identifiers (PUIDs), object IDs, and modification times. You cannot modify implicit attributes. Implicit attributes are supplied for each class and relationship. Contrast with *user-defined attribute*.

import utility A utility that can be used to restore a project or database from backup.

lifecycle The phases of a project from its initial requirements specification through its implementation.

link An instance of a relationship. You can link two requirements together if a relationship between their corresponding classes is defined.

list attribute A user-defined attribute type that provides a list of values from which the Dimensions RM user can make a selection. For example, if you require the Dimensions RM user to choose one of a given set of values for the attribute *test_result*, specify the attribute as a list attribute, and define *pass*, *fail*, and *untested* as the set of allowed values. See also *group attribute*, which functions like an interdependent group of list attributes.

lock manager A Dimensions RM tool used to lock and unlock Dimensions RM database elements such as source documents, tools, objects, and collections.

lowest level child A current object that is descended from the selected object. The objects contained in the lowest-level children list may skip generations of an object; that is, they need not be immediate children of the selected object.

mandatory attribute An attribute for which users must specify values. Contrast with *optional attribute*.

manual capture A method of capturing objects one at a time using the RM Capture tool. This method is particularly suitable for capturing objects from documents that are short or not formally structured. Contrast with *batch capture*.

NOT_PRIMARY_IN A relationship operator that is used to identify requirements that can be at the origin of a link, but do not.

NOT_SECONDARY_IN A relationship operator that is used to identify requirements that can be at the termination of a link, but do not.

numeric attribute A user-defined attribute type that holds numeric values, such as reference numbers. The numbers can include decimal points.

numeric sort A method of sorting that is used for alphanumeric attributes such as paragraph numbers in outlines. For example, with a numeric sort, the numbers (10, 20, 1, and 2) are sorted as (1, 2, 10, 20) instead of (1, 10, 2, 20). Contrast with *alphabetic sort*.

object Synonymous with *requirement*.

Object Editor A Dimensions RM dialog used to modify attributes and edit, focus, and expand class information.

OLE Object Linking and Embedding. A technology for transferring and sharing information among applications.

optional attribute An attribute for which you can use the default values or leave blank. Contrast with *mandatory attribute*.

ORACLE_HOME The logical pathname of the file system or network location of your Oracle installation.

parent collection A collection that links child collections. Parent collections cannot be linked directly to an object.

parent database A database at a main contractor's site used to hold the project's original objects. Used in the context of database partitioning only. Contrast with *child database*.

parent object An original object that produces a new object when the original object is edited. The original object is called the immediate parent object, and the new object is its immediate child object. If this process is repeated, a child object can itself be a parent object of another child object. In this way, the original parent object can spawn multiple levels of descendants, including both immediate child objects and lowest-level child objects. One or more parent objects can produce one or more child objects.

pending change request A change request that has not yet been accepted or rejected. A pending change request has a Current Status of "proposed."

polling A feature of RM Browser that lets you solicit feedback about a requirement from selected users. Polls are typically used to decide whether a specific requirement should be accepted, or to reach consensus concerning the content of a requirement.

primary class The first class in a direct relationship between two classes. For example, in the relationship *Is_Tested_By* that connects class *Code_Module* and class *Acceptance_Tests*, *Code_Module* is the primary class, *Is_Tested_By* is the relationship, and *Acceptance_Tests* is the secondary class. The direction of the relationship arrow is always from the primary to the secondary class in the class definition diagram. This direction and positioning on the diagram defines the direction of the relationship. Contrast with *secondary class*.

PRIMARY_IN A relationship operator that is used to identify requirements that are at the origin of a link.

primary object An instance of a primary class to which objects are linked.

project A Dimensions RM work area where information is created and maintained.

proposed Current Status of a requirement for which a change request has been made to either change the current requirement or create a new requirement.

pseudonym Text pattern used to locate objects to be linked to a collection. For example, pseudonyms of the keyword "calibrate" might be "calibrated," "calibrating," or even the wildcarded string "cal*". Unlike aliases, which exist for the duration of the project or until they are deleted, pseudonyms exist only during the linking process. See also *alias*.

PUID Project Unique Identifier. An intrinsic attribute.

query A filter or script, expressed in terms of the project schema, that you use to retrieve selected requirements.

quick search A feature of the Requirements View in RM Browser that lets you quickly create a query to see the content of any category.

Reject A command that rejects a proposed change. The Current Status of the proposed requirement becomes "rejected," and a copy of the requirement is created with the Current Status of "current."

rejected Current Status of a change request that has been rejected.

relationship An association between two classes. It is also an entity in its own right, in terms of having its own attributes and associated user access rights. See also *link*.

relationship attribute A property of a relationship, such as its cardinality and its inheritance characteristics. Relationship attributes, defined by the Project Administrator, can control how traceability is established across different relationships. Project Administrators can specify that links be created between two objects according to the value of one or more of the class attributes. For example, it can be specified that links can be created from a change request object to a requirement object only if the value of the change request object's attribute APPROVAL_STATUS is APPROVED. See also *cardinality rule*.

relationship rule Circumstances under which links between objects will be permitted. See also *cardinality rule*.

Remove A command that physically removes a requirement from a project. Only requirements with a status of "current" can be removed.

Replace A command that creates a new version of a requirement with the changes you made. The Current Status of the original requirement is changed from current to replaced, a parent-child link is created from the original requirement to the new requirement, and the current status of the new requirement is set to current.

replaced Current Status of a requirement that has been replaced by a newer version.

resource category A grouping of resources into a class of items. For example, a unique document name falls into the category of Documents. Resource categories are important when assigning default permissions because defaults are assigned to entire class of resources rather than an individual resource. Resource categories are also important when assigning appropriate transaction for a class of resources. Certain transactions are appropriate only for certain categories of resources.

requirement An instance of a class. A description of a set of conditions applicable to a product or process; this description must be capable of being validated for success. A requirement object is satisfied by a product or process if a test reveals that the described conditions are met by the product or process. Synonymous with object.

Requirements View An RM Browser view that lets you view and modify requirements that are organized by category. From this view, you can run an existing filter, run an existing script, run a quick search to create a new query, and add queries that you access frequently to a favorites folder. See also *Documents View*, *My Work View*, *Traceability View*.

RM Browser A Dimensions RM tool that provides Web access to a core set of Dimensions RM functions.

RM Capture A Dimensions RM tool that lets users extract objects from ASCII documents and pass them to the Dimensions RM database, where they can be analyzed and engineered as required.

RM Concept A Dimensions RM tool that tracks the requirements engineering and change processes. In RM Concept, you can capture requirements both manually and automatically, and can customize views for reporting and information gathering. To support change management, RM Concept manages requirements, reports changes, generates customized reports, and compares versions. You can run multiple instances of RM Concept simultaneously. RM Concept provides locking at the data level.

RM Explorer A Dimensions RM tool that provides an integrated Windows Explorer-like view of a project, so you can see and organize an entire project at once, not just one element at a time. RM Explorer provides a single interface for starting other Dimensions RM tools. You do not have to log in to the other tools from RM Explorer; however, if you start other tools from outside of Dimensions RM, you have to log in to each one individually.

You can use RM Explorer to manage and organize all the elements and source files of your project. RM Explorer lets you see the hierarchy of classes, collections, documents, files, and folders in your project. You can import and update data with RM Explorer, and view the attributes of all the components of your project. You can also use RM Explorer to create custom views and filters.

RM Import A Dimensions RM tool that lets you preview a Microsoft Word document as a draft document, change the description of chapters, reorganize the chapters, change the values of attributes, move attributes between chapters, and so on. When satisfied with the draft document, you can import the document into Dimensions RM as a document that can be viewed and modified in the Document View of RM Browser.

RM Import Designer A Dimensions RM tool that lets administrators design templates that users select when importing Word documents from RM Import. Templates define how to identify classes, attributes, chapters, requirements, and categories.

RM Manage A Dimensions RM tool that lets project administrators define users and groups, administer project security, configure the project database, organize data, and control user access and data routing.

RM Word A Dimensions RM tool that lets you capture, delete, and edit data directly from Microsoft Word. In RM Word, you can register documents in the database and synchronize requirements in a document with requirements in the database.

RTM_HOME A logical name for the file system location of Dimensions RM programs and data.

schema diagram See *class definition diagram*.

script A query against one or more classes. Scripts are the most comprehensive way to perform searches. They can be used to combine the selection criteria capabilities provided by complex filters, with complex link traversal, parameterization, basic calculations, and output formats. Contrast with *filter.*

script generator wizard A Dimensions RM wizard that provides a graphical interface allowing the user to specify the contents of a given report.

secondary class An object class that is the destination of the relationship arrow from a primary class in a class definition diagram. The relationship arrow points to the secondary class. Contrast with *primary class*.

SECONDARY_IN A relationship operator that is used to identify requirements that are at the termination of a link.

snapshot In the Document View of RM Browser, a read-only baseline of a document.

source document A document, typically provided by the customer, which is input to the system being developed. A source document can also be written in Dimensions RM by using an empty document and inserting objects.

source parent The original object that was either captured from a document or input into the system. Source parent objects never have a "current" status.

source relationship A relationship that refers to the original object in a chain of versions. Contrast with *immediate relationship*.

suspect link A link that becomes questionable after one of the requirements in the link changes. The change could render other requirements questionable, or "suspect."

tablespace A logical storage unit. Your project data is physically stored in one or more data files associated with a tablespace. Initially, only one file is associated with the tablespace, but you can add more files as you need them. The size of a tablespace is determined by the size of the data file or combined data files that make up the tablespace.

template A set of rules defined by an administrator in RM Import Designer that determines how a document will be imported into Dimensions RM using the RM Import tool.

text attribute A user-defined attribute type that holds up to 64 KB of alphanumeric, ASCII text that can span more than one line. It is suitable for long descriptions, such as the description of an acceptance test.

transactions Actions associated with a category of resources that represent what can be done with that resource. For example, an update transaction is associated with a class definition. A user that has the update transaction for a particular class definition can change characteristics of that class definition and store them in the database.

traceability The process of making explicit links between requirements and other entities. Traceability lets you trace the evolution of a project.

Traceability View An RM Browser view that provides a way to select the relationships you want to trace, with requirements limited to selected baselines, documents, collections, or categories; browse through the requirements that are part of the relationships; and then print traceability reports that display the information in a visual format that is easy to analyze. See also *Documents View*, *My Work View*, *Requirements View*

type A definition of the basic properties of a set of instances of a class, relationship, or attribute.

Undelete A command that changes a the Current Status of a requirement from "deleted" to "current."

Update A command that overwrites the content of the requirement. No history of the change is maintained. This is only recommended if previous versions of a requirement must be deleted. All other attributes, including Current Status, remain intact.

user An individual responsible for performing basic information management tasks, such as capturing objects, including generic and CASE tool data in the Dimensions RM database, creating traceability links among requirements and other data, engineering and categorizing objects, and producing reports. An individual Dimensions RM user.

user-defined attribute An attribute that you can create for use in a specific class. See also *action attribute*, *alphanumeric attribute*, *date attribute*, *file attachment attribute*, *graphic attribute*, *group attribute*, *list attribute*, *numeric attribute*, *text attribute*. Contrast with *implicit attribute*.

Index

E

F

G

H

L

M

N

O

P

Q

R

S

T

U

V

W

X