SERENA®

DIMENSIONS® RM 11.2.2

RM Browser User's Guide

Serena Proprietary and Confidential Information

Copyright © 2001–2011 Serena Software, Inc. All rights reserved.

This document, as well as the software described in it, is furnished under license and may be used or copied only in accordance with the terms of such license. Except as permitted by such license, no part of this publication may be reproduced, photocopied, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of Serena. Any reproduction of such software product user documentation, regardless of whether the documentation is reproduced in whole or in part, must be accompanied by this copyright statement in its entirety, without modification.

This document contains proprietary and confidential information, and no reproduction or dissemination of any information contained herein is allowed without the express permission of Serena Software.

The content of this document is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Serena. Serena assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

Trademarks

Serena, TeamTrack, StarTool, PVCS, Collage, Comparex, Dimensions, RTM, Change Governance, and ChangeMan are registered trademarks of Serena Software, Inc. The Serena logo, Professional, Version Manager, Builder, Meritage, Command Center, Composer, Reviewer, Mariner, and Mover are trademarks of Serena Software, Inc.

All other products or company names are used for identification purposes only, and may be trademarks of their respective owners.

U.S. Government Rights

Any Software product acquired by Licensee under this Agreement for or on behalf of the U.S. Government, its agencies and instrumentalities is "commercial software" as defined by the FAR. Use, duplication, and disclosure by the U.S. Government is subject to the restrictions set forth in the license under which the Software was acquired. The manufacturer is Serena Software, Inc., 1900 Seaport Blvd., Redwood City, CA 94063.

Publication date: May 2011

Table of Contents

Preface **9**

Chapter 1 **RM Browser Basics** **11**

Overview 12
RM Browser Basics 13
Updating, Replacing, and Deleting Requirements 14
Logging In 14
Switching to Another Project 16
Changing Your Password 16
Getting Help 17
Viewing Version, System, and Contact Information 17
Logging Out 18
Demonstration Projects 18
The QLARIUS_RM Project 18
The RMDEMO Project 19

Chapter 2 **Using the Home Page** **21**

Working on Your Home Page 22
Expanding and Collapsing a Section 23
Customizing Your Home Page 23

Chapter 3 **Using the Requirements View** **25**

Working in Requirements View 26
Grid, Editable Grid, and List Views 27
Grid View 28
Editable Grid View 28
List View **29**
Toggling Between Views 29
Using Quick Search 29
Using the Quick Search Pane to Run a Query 30
Restoring the Quick Search Pane 31
Changing the Columns Displayed in Quick Search Results 31

Chapter 4 **Managing Documents** **35**

Working in Documents View 36
Understanding the Navigation Tree 37
Understanding the Detail Pane 38
Printing from the Detail Pane 39
Working in Paragraph or Grid Layout 39
Specifying Document Format 39
Specifying Paragraph Layout or Grid Layout for a Chapter 42
Creating a Document 42

Opening a Document 44
Editing a Document 44
Deleting a Document 45
Deleting a Requirement 45
Creating a Snapshot of a Document 46
Comparing a Document and Its Snapshot 47
Working with the Requirement Difference Summary 49
Publishing the Document Differences Report 50
Viewing a Snapshot or Document 50
Comparing Collections and Baselines 50
Publishing Microsoft Word Documents 51
Viewing Attachments in the Published Document 52
Specifying Document Properties 54
Saving a Document with Another Name 55
Creating a Chapter 56
Editing a Chapter 58
Removing a Chapter 58
Adding a Requirement 59
Finding and Replacing Character Strings 60
Working with Limited Permissions 62
Merging Document Changes 63
Merge Status 64
Viewing Prior Versions of the Document 65
Merging Changes 65
Merging Chapter Changes 65
Merge Status 67
Viewing Prior Versions of the Chapter 67
Merging Changes 67

Chapter 5 **Using the Traceability View 69**
Working in Traceability View 70
Understanding the Traceability Tree 71
Setting Traceability Options 72
Printing Requirements 72
Creating a New Traceability Report 73
Specifying Classes to Display 74
Opening a Report 75
Deleting a Report 75
Printing a Report 76
Editing a Report 76
Customizing the Traceability Tree 77
Manually Ordering Requirements in Traceability Reports 79

Chapter 6 **Managing Reports 81**
Managing Reports 82
Running an Existing Class, Relationship, or Traceability Report 82
Running Reports 82
Creating a Class Report 83

Creating a Relationship Report 85
Creating a Traceability Report 87
Editing a Report. 87
Query Dialog Boxes 89
Attribute Constraints Tab 90
Relationship Constraints Tab 93
Display Options Tab 97

Chapter 7 **Managing Requirements 101**
Creating a New Requirement. 102
Creating a New Requirement 102
Submitting a Change Request for a New Requirement 106
Editing a Requirement 106
Editing Requirement Attributes 107
Editing the HTML-Enabled Text Attributes. 110
Printing a Requirement. 111
Attaching a File to a Requirement 111
Linking Requirements. 113
Link Requirements Method 114
Edit Requirement Links 115
Suspect Links 117
Merging Requirement Changes 119
Merge Status 121
Viewing Prior Versions of the Requirement 121
Merging Changes 122
Administering Locks 122
Viewing Requirement History 123
Changing the Attributes in the History Section 124
Viewing History Differences 125
Polling 126
Creating a Poll 127
Modifying a Poll. 128
Closing a Poll 129
Casting a Vote 129
Viewing Polling Results. 129
Adding Built-In Queries to Your Home Page 130
Participating in Discussions 130
Adding a Comment from the Menu Bar 130
Adding a Comment from a Discussion 131
Changing the Discussion View. 131
Submitting a Change Request 131
Reviewing a Change Request 132
Adding Requirements to an Existing Collection 133
Moving Requirements Between Categories 133
Deleting Requirements 134
Removing Requirements. 134
Saving Query Results 135
Configuring Internet Explorer (IE) to Save Query Results. 135

Understanding a Saved XML Document 136
Printing Query Results 138
Refreshing Data 138

Chapter 8 **Managing Containers and Collections 141**
About Containers 142
Types of Containers 142
Managing Containers 142
Managing Collections 143
Managing Requirements in a Collection 143
Adding a Collection 145
Deleting a Collection 147
Updating Collection Properties 147
Refreshing the Content of a Collection 148
Baselining a Collection 148
Moving Containers to a Different Category 150

Chapter 9 **Importing Requirements 153**
Importing Requirements from Microsoft Word Documents 154
When to Import Using RM Browser? 154
What Can You Import? 154
How is Imported Content Structured? 155
Setting Up Import Using RM Browser 155
Importing Requirements from Microsoft Word 156
Importing Requirements from an XML File 157
Importing Requirements from a CSV File 158

Chapter 10 **Administering RM Browser 163**
Managing Categories 164
Specifying Project Settings 165
Setting Autoloading of Documents 167
Allowing Linking to Baselined Objects 167
Changing the Columns Displayed in Quick Search Results 168
Customizing the Editable Grid 169

Chapter 11 **Administering Web Forms and Templates 171**
Customizing Web Forms 172
Template Processing 172
Template Layout 173
Customizable Web Forms 180
Allowable Tags 181
Creating Templates to Publish Requirements 183
Defining Headers and Footers for Published Documents 184
Defining Custom Styles for Published Documents 185
Publishing a Document with File Attachments from a Separate Server . . . 185
Changing the Default Settings of the RM Browser Text Editor 186
Configuring the Expansion and Collapse of RM Browser Sections 186
Creating Custom Login Alert Pages for RM Browser 186

Add a Custom Logo to RM Browser 187

Chapter 12 **Script Syntax 189**
Overview 190
SELECT Statement 190
DTPtag 191
DTP_TEXT Display Item 191
RTM_KEYWORD Display Item 192
WHERE Clause 192
ORDER BY Clause 196
CALCULATE Statement 196
XREF Statement 198
PLUS Statement 200
COMMENT Statement 200

Glossary 201

Index 213

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.

Chapter 1

RM Browser Basics

Overview	12
RM Browser Basics	13
Updating, Replacing, and Deleting Requirements	14
Logging In	14
Switching to Another Project	16
Changing Your Password	16
Getting Help	17
Viewing Version, System, and Contact Information	17
Logging Out	18
Demonstration Projects	18

Overview

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

RM Browser Basics

This section discusses basic concepts about working in RM Browser.

- You can work from the following views in RM Browser:
  - **Home**—You can customize your Home page to include up to seven expandable sections. Each section contains the results of a query. Your Home page lets you quickly view and modify requirements that you refer to on a regular basis.
  - **Requirements View**—Requirements View is organized according to defined categories, and allows you to run filters and scripts, create new queries, and view and modify requirements that are returned. Requirements View offers two views: a grid view that displays multiple requirements in a tabular format, and a List view that displays one requirement at a time and allows navigation to other requirements. You can perform commands on requirements from either view.
  - **Documents View**—Documents View provides a document-like presentation of requirements, with a table of contents, chapters, and subchapters. Requirements and subrequirements are contained within the chapters and subchapters. Documents View allows you to easily add, delete, move, and edit chapters and requirements. Microsoft® Word documents that you imported through the RM Import tool are displayed in Documents View. As with documents that you create in Documents View, you can easily add, delete, move, and edit chapters and requirements from the imported Word document in Documents View. Note the following points:
    - Word uses unique, proprietary styles and formatting; therefore, the styles and formatting of the Word document (for example, some lists, bullets, and fonts) are not necessarily preserved in Documents View. However, RM Import always attempts to import all text to prevent data loss.
    - You cannot import the changes you make in Documents View back into the original Word document. Roundtripping between Dimensions RM and Word is not supported.
    - Documents in Documents View are **NOT** the same as the Word documents from which they were imported. Dimensions RM does not store the Word document; it parses the data into classes (requirements and so on) so the data is available to the entire project.

    You can create a snapshot of a document that is a baseline of the document. You can compare a document and one of its snapshots or compare two snapshots of the same document. Visual indications of the changes let you quickly identify the changes between the two.

    Documents View consists of two panes: 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. Documents View offers two formats: a grid format that displays multiple requirements in a tabular style, and a paragraph format that displays multiple requirements in a paragraph style.
  - **Traceability View**—Traceability is a way to analyze the linkages between requirements. Traceability View 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. Traceability View 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.

When you install Dimensions RM for the first time and open RM Browser, your Home page is presented. The last view that was open when you logged out of RM Browser is presented the next time you log in. The last view that was open is remembered even after an upgrade to a later version of Dimensions RM.

- To toggle between fields on a page, press the Tab key.
- The values of some fields are validated against whether they are required, whether numeric ranges are valid, whether dates are valid, and so on. Icons that appear to the left of fields or next to section titles indicate the status of these fields. If you rest your cursor over one of these icons, a tooltip provides the valid values for the field.

  indicates that the value of a field is invalid or that an empty field must be filled in.

  indicates that the value of a field is valid.

  indicates that the value of a field has changed.
- Some reports show multiple requirements on the same line. Each requirement can be selected separately.
- Commands are disabled if you do not have permission to use them or if no requirement is selected.

Updating, Replacing, and Deleting Requirements

Dimensions RM allows you to modify requirements in some fundamentally different ways. It is critical to understand the difference between these options - update, replace, and delete - when you work on requirements. Consider these comments when you are presented with a choice.

- **Replace**: Replacing requirements 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**: Updating requirements 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**: Deleting requirements marks them as deleted and makes them unavailable to modify, however they remain in the database and can be undeleted later on. By default deleted requirements are not visible, however you can query for 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 timeout session 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

The **Switch project** dialog box lets you switch to another project in the database in which you are currently working.

NOTES You cannot use the **Switch Project** command to switch to a project that is in another database. You must instead log out and then log in to the other database and project.

To switch to another project:

1. Click the **Change** button at the bottom left of the main RM Browser screen.
2. The **Switch Project** page opens.
3. Select another project, and then click **Open** or press the Enter key.

Changing Your Password

If your administrator did not select any password options in your user profile, you must change your password before the expiration date. Your password expires at the end of the period specified in the **Password expiration days** setting in the **Password Rules** dialog box. Before your current password is due to expire, you receive a warning dialog box that gives you the opportunity to change your password, as specified in the **PassWord Expiry Warn Prior To Expiry Day** setting.

If your password expires, the **Password has expired** page opens after you try to log in. Complete this page using the instructions provided in this procedure.

To change your password:

1. Click **Authentication** from the bottom right of the screen. The Change Password dialog box appears.
2. Type your existing password in the **Old Password** field.
3. Type the new password in the **New Password** field.

   Format your new password according to the password rules set up by your administrator. To see the rules, click the **Password Rules** link in the Change Password dialog box.
4. Type the new password again in the **Confirm Password** field.
5. Click **OK**.

Getting Help

While you work in RM Browser, you can get help for the page or dialog box you are on or look up information in the Help system.

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

- Click **Help** at the top right of the dialog box.

  A Help topic specific to the RM Browser page or dialog box opens.

To open the RM Browser Help system:

- Select **Help** from the **more** menu.

  The online Help system opens. For detailed information about looking up information, do the following:

  a Click **Contents**.

  b Expand the **Welcome to Dimensions RM** and **Using Online Help** books.

  c Select topics about navigation and searching in the **Using Online Help** book.

Viewing Version, System, and Contact Information

To view version and system information:

1. Select **About** on the title bar. The **About Dimensions RM** dialog box opens.

   The following information is displayed on the dialog box:

   - [Product Name 1 short] version
   - Web server
   - Web server operating system

- Database
- Browser Name
- Browser Agent
- Attributions

2 Click **E-mail config info to Serena** if you are working with Serena Customer Support on an issue.

To view contact information:

1 Click the **Contact Information** tab.

2 Click links on the dialog box to view information about Serena Software, Inc.

Logging Out

To log out of RM Browser:

- Select **Log Out** from the title bar.

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

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

QLARIUS_RM	
User Name	**Password**
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

Chapter 2

Using the Home Page

Working on Your Home Page 22

Expanding and Collapsing a Section 23

Customizing Your Home Page 23

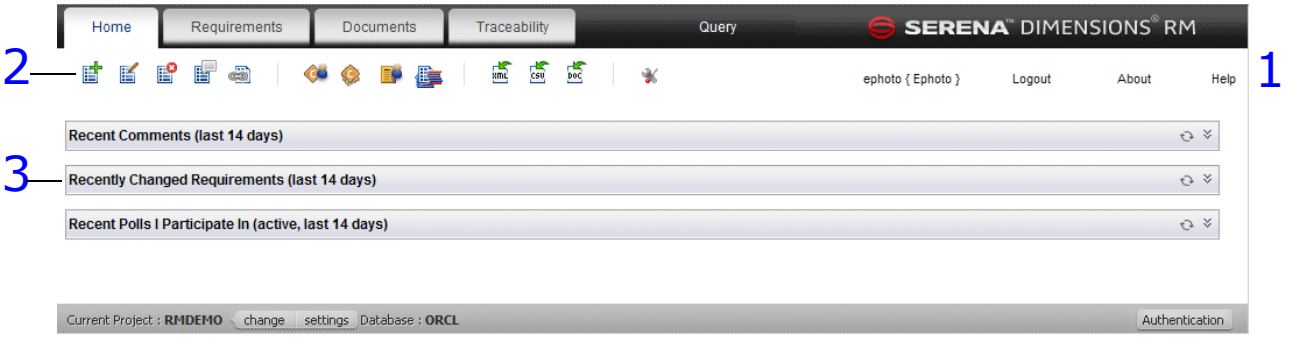
Working on Your Home Page

Your Home page contains up to seven queries that you run frequently or that are of special interest to you. You can modify requirements directly from your Home page. Your Home page initially contains four expandable sections that contain the results of built-in queries. For information about customizing your Home page, see "Customizing Your Home Page" on page 23.

NOTE You must have "read" access to run the default scripts and filters that are provided on your Home 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.

To return to your Home page:

Click the **Home** tab. The Home page includes the components listed in the table that follows.



Key	Component	Description
1	Title Bar	Displays the name of the database and project you are working in, and your user ID. The title bar also displays the view you are in and contains **Help**, **About**, and **Logout** links.
2	Command Bar	Provides commands that allow you to perform tasks in RM Browser.
3	Content Pane	Contains up to seven expandable sections. When you expand a section, the results of a query are displayed. Additional information about the query is displayed in parentheses after the query name. Such information includes the categories to which its results belong and its time frame. **NOTE:** If no category names are displayed next to a query name, then all categories are represented in the query results.

Expanding and Collapsing a Section

When you expand a section the first time during an RM Browser session, data is retrieved from the database. However, when you collapse and then expand a section, the data in the section is not refreshed. To refresh the data, click the refresh button .

To expand a section:

- Click the **expand** button .

To collapse a section:

- Click the **collapse** button .

Customizing Your Home Page

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

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 your Home page:

1. Click **Customize Home** on your Home page. The **Customize Home** 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 Home 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

Using the Requirements View

Working in Requirements View	26
Grid, Editable Grid, and List Views	27
Using Quick Search	29

Working in Requirements View

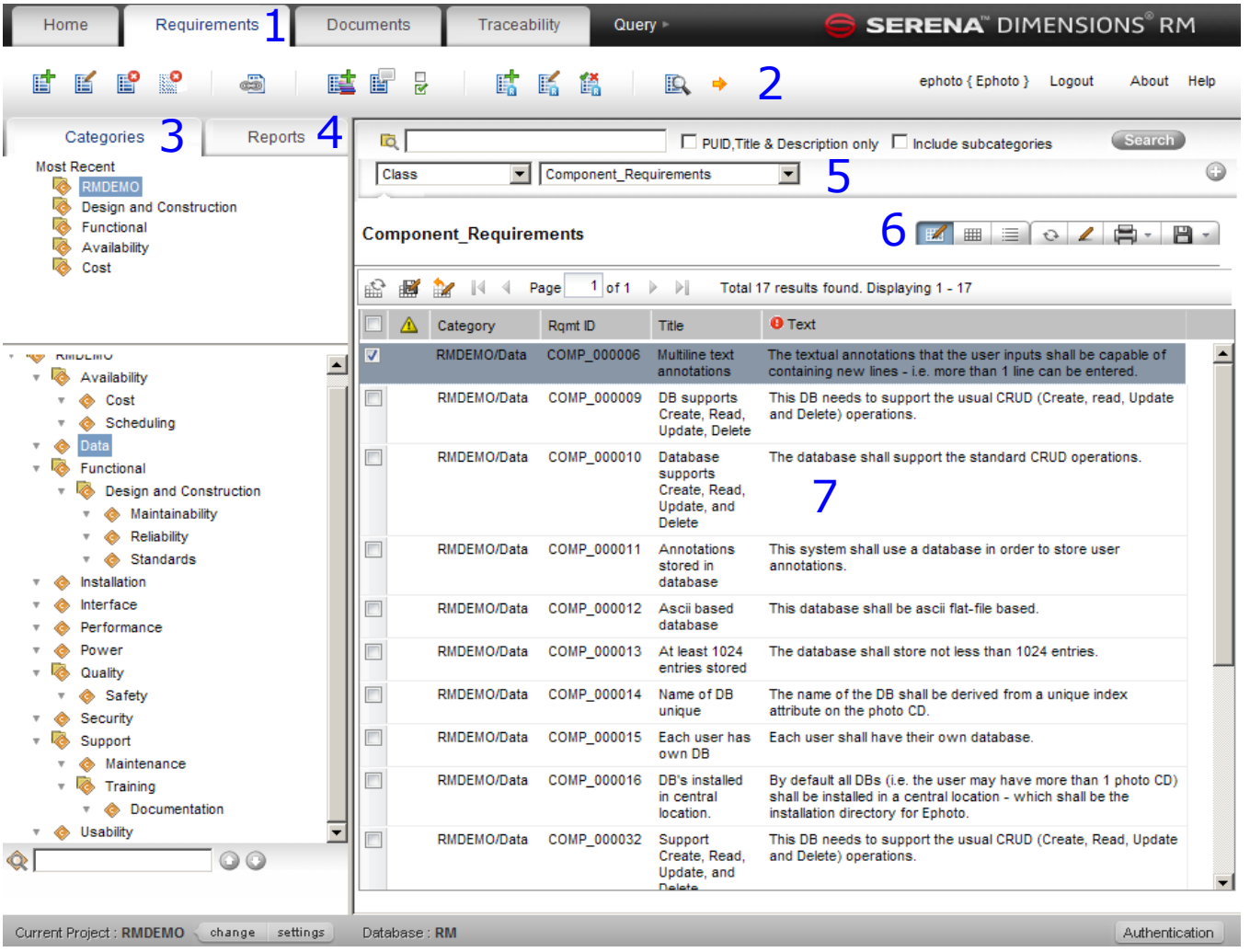
Requirements View offers a perspective that allows you to view and modify requirements that are organized by category. From this view, you can run an existing filter, run an existing script, run a quick search to create a new query, and add queries that you access frequently to a favorites folder. You can also perform commands available on the command bar.

Note the following:

- The default root category has the same name as the project.
- A requirement can belong to only one category at a time.
- Requirements can be moved between categories.
- Categories can have subcategories.
- A subcategory can be a child of only one category.
- Each category can contain requirements from all classes.

To navigate to the Requirements View:

- Click the **Requirements** tab. Its components are listed in the table that follows.



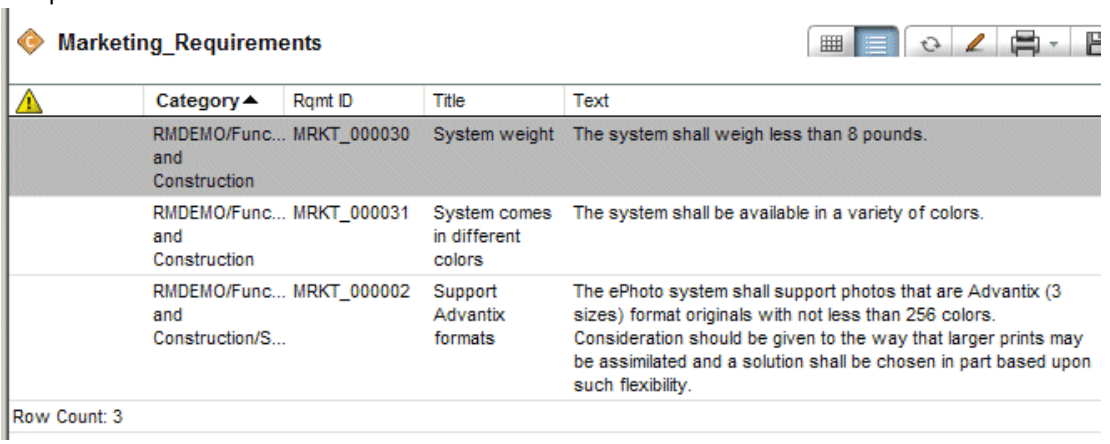
Key	Component	Description
1	View selector	Displays the name of the view you are currently working in and allows you to select another view.
2	Command Bar	Provides commands that let you perform tasks in RM Browser.
3	Categories tab	When you expand this section, all defined categories and subcategories are displayed. If you do not have any categories defined, the project name, which is the root category, is displayed. After you select a category, you can click the collapse icon to collapse the tree and show only the selected category. You can move or copy scripts from the filters, scripts, traceability reports, and query results tree into categories in this section. The **Category** field in the quick search section is populated with the category that is selected in this tree. If you are viewing a filter or query in the content pane and want to return to the quick search, click **Quick Search** at the top of the category tree.
4	Reports tab	Includes the **Class Reports**, **Relationship Reports**, and **Traceability Reports** nodes. When you expand the **Class Reports** node, all classes that contain filters are displayed. When you expand a class, the filters associated with it that belong to the selected category are displayed. Filters are limited to one class. In the tree they are indicated by the filter icon . When you expand the **Relationship Reports** node, all saved relationship reports that belong to the selected category are displayed. When you expand the **Traceability Reports** node, all saved traceability reports that belong to the selected category are displayed. Traceability reports are in fact scripts. In the tree, they are indicated by the traceability report icon .
5	Quick Search Pane	Lets you quickly create a query to see the content of any category. By default, the quick search pane is visible when you navigate to Requirements View. For information about creating a query this way, see "Using Quick Search" on page 29.
6	View mode selector	Allows you to choose between the Grid view, Editable Grid view, and List view.
7	Content Pane	Displays query results.

Grid, Editable Grid, and List Views

There are a few ways to view and manipulate requirement content in the Requirements View: the Grid view, Editable Grid view, and List view.

Grid View

The Grid view is a tabular view of requirement content in which you can view many requirements or links from one screen.



Marketing_Requirements

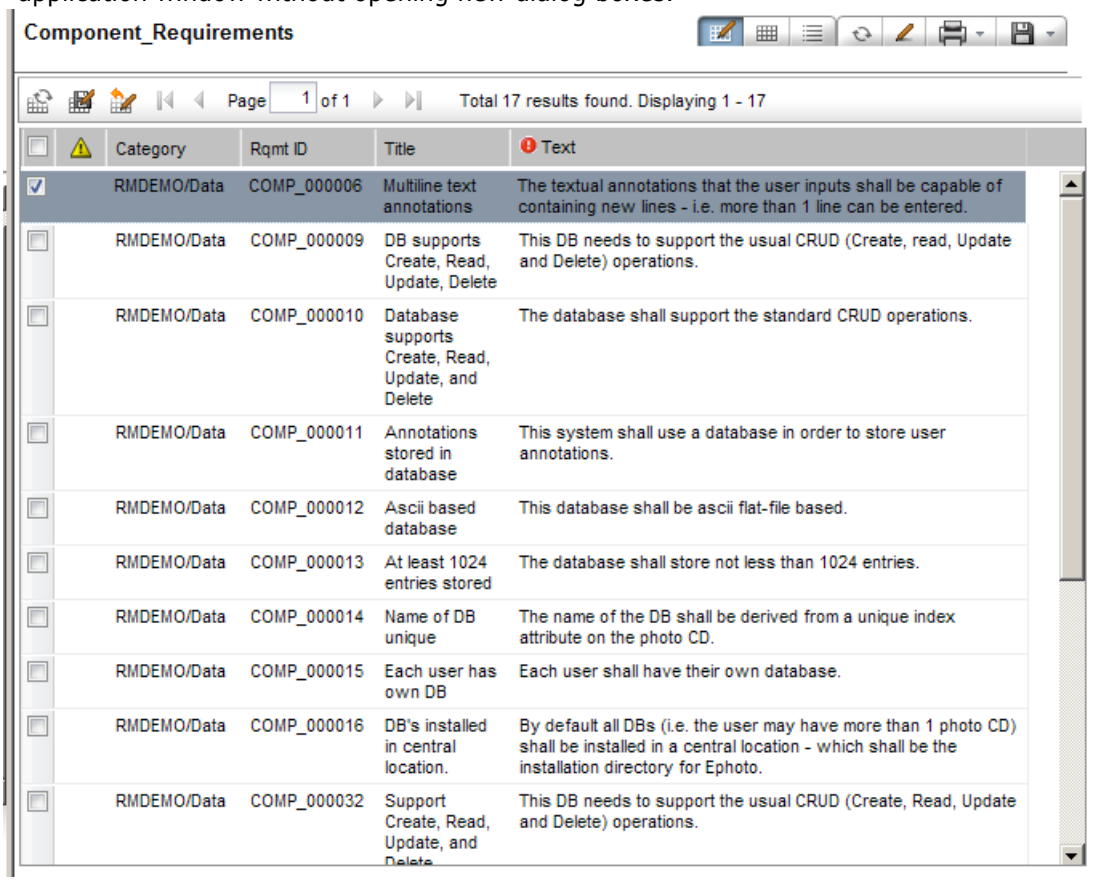
Category	Rqmt ID	Title	Text
RMDEMO/Func... and Construction	MRKT_000030	System weight	The system shall weigh less than 8 pounds.
RMDEMO/Func... and Construction	MRKT_000031	System comes in different colors	The system shall be available in a variety of colors.
RMDEMO/Func... and Construction/S...	MRKT_000002	Support Advantix formats	The ePhoto system shall support photos that are Advantix (3 sizes) format originals with not less than 256 colors. Consideration should be given to the way that larger prints may be assimilated and a solution shall be chosen in part based upon such flexibility.

Row Count: 3

You can click column headers to sort by ascending and descending order.

Editable Grid View

Use the Editable Grid view to edit requirement attributes directly in place in the main application window without opening new dialog boxes.



Component_Requirements

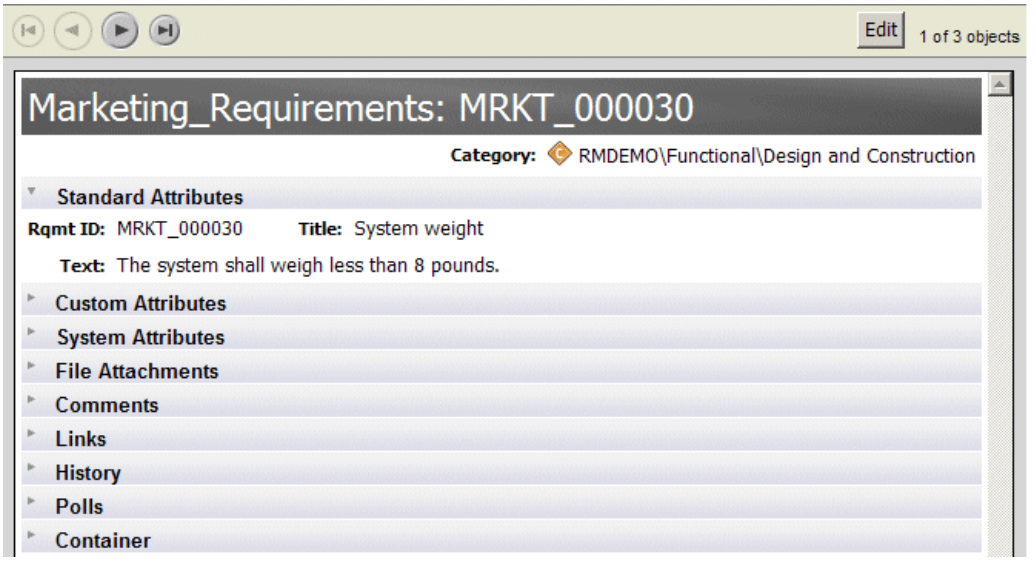
Page 1 of 1 Total 17 results found. Displaying 1 - 17

Category	Rqmt ID	Title	Text
RMDEMO/Data	COMP_000006	Multiline text annotations	The textual annotations that the user inputs shall be capable of containing new lines - i.e. more than 1 line can be entered.
RMDEMO/Data	COMP_000009	DB supports Create, Read, Update, Delete	This DB needs to support the usual CRUD (Create, read, Update and Delete) operations.
RMDEMO/Data	COMP_000010	Database supports Create, Read, Update, and Delete	The database shall support the standard CRUD operations.
RMDEMO/Data	COMP_000011	Annotations stored in database	This system shall use a database in order to store user annotations.
RMDEMO/Data	COMP_000012	Ascii based database	This database shall be ascii flat-file based.
RMDEMO/Data	COMP_000013	At least 1024 entries stored	The database shall store not less than 1024 entries.
RMDEMO/Data	COMP_000014	Name of DB unique	The name of the DB shall be derived from a unique index attribute on the photo CD.
RMDEMO/Data	COMP_000015	Each user has own DB	Each user shall have their own database.
RMDEMO/Data	COMP_000016	DB's installed in central location.	By default all DBs (i.e. the user may have more than 1 photo CD) shall be installed in a central location - which shall be the installation directory for Ephoto.
RMDEMO/Data	COMP_000032	Support Create, Read, Update, and Delete	This DB needs to support the usual CRUD (Create, Read, Update and Delete) operations.

Simply double-click on an attribute to edit it directly. When you are done editing attributes, click the **Apply Changes** button .

List View

The List view allows you to view requirements one at a time. The form contains fields that display the requirement's attributes. There is a default form for each class, depending on the attributes of the class.



To navigate between requirements in the class:

- Click the navigation buttons at the top of the form.

Toggling Between Views

Note the following:

- If the query results contain a filter or a script with only one class, you can toggle between the Grid and List view.
- If the query results contain a script with more than one class, or a traceability report, only the Grid view is available.
- If the List view is selected, and you select a script that contains more than one class, the view is automatically switched to grid view. However, the List view will be remembered as the preferred view. The next time you select a script with only one class, or select a filter, the results are displayed in List view again.

To toggle between views:

- Select **Grid View**, **Editable Grid View**, or **List View** at the top right of the page under the command bar.

Using Quick Search

The quick search pane in Requirements View allows you to quickly run a query to see the content of any category based on the criteria you specify. By default, the quick search

pane is displayed when you navigate to Requirements View. You can change this default behavior by clearing a check box in the **User Settings** dialog box.

NOTE You cannot save the results of a quick search.

Using the Quick Search Pane to Run a Query

To run a query using the quick search pane:

1. Enter a word or string to narrow the query results to requirements that contain that text in one of their attributes.
   - If you enclose a string in quotation marks, the search returns requirements containing the whole string, even if there are spaces between words in the string.
   - If you do not enclose a string in quotation marks, the search returns requirements containing each of the individual words in the string.
2. Select the **PUID, Title, & Description only** check box if you want to search only the title and description attributes (displayed in the **Title** and **Text** columns). If you clear this check box, text and alphanumeric attributes that are visible are searched as well. System attributes are not searched.

   NOTE This check box determines what is searched, but not what is displayed. The displayed columns are always the same.
3. In the initial search field, choose to search by **Class**, **Container**, or **Object Status**:
   - **Class:** A list of classes appears. Select the class in which you want to search.
   - **Container:** A list of categories appears, follwed by an **Is**/**Is not** option, followed by a list of containers. Choose the category to which the container belongs. Then select **Is** and choose a specific container to search, or select **Is Not** and choose a specific container to exclude from the search.

     NOTE In the **Container** list, the class or classes above the dotted line have requirements in the selected category.
   - **Object Status:** An **Is**/**Is not** option appears, followed by a list of object status states. Select **Is** and choose a specific status to search for, or select **Is Not** and choose a status to exclude from the search.
4. To narrow your search further:
   - **a** Click the plus icon beside the initial search field to add a new search criteria.
   - **b** Here, you can choose to add a new criteria by limiting the Class, Container, Custom Attributes, System Attributes, or Object Status to search. If you choose **Container**, **System Attributes**, **Custom Attributes**, or **Versions**, select **Is** or **Is Not** and choose to include or exclude the following from the search:

- A specific container
- A specific system or custom attribute
- An object at a specific state such as *Current*

5 Click **Search** to execute the search.

Restoring the Quick Search Pane

The quick search pane is not displayed after you run a report from the **Reports** tab.

To restore the quick search pane and run a query:

- Display the **Categories** tab and click **Quick Search** at the top of the category tree.

  The query is run using the selected category and the criteria that is already specified in the quick search pane. The results are displayed in the content pane.

NOTE By default, quick search is set to run automatically when you navigate to the Requirements View. When the quick search runs automatically, the default settings in the quick search pane are used. If you change any of the settings in the quick search pane, you must click **Find** to see the results. For example, if you change to a different category, the results will be shown automatically, but if you specify a string, you must click **Find** to see the results.

For information about how an administrator can set quick search to not run automatically, see the *Serena Dimensions RM Administrator's Guide*.

Changing the Columns Displayed in Quick Search Results

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 by changing the columns that are displayed and their order.

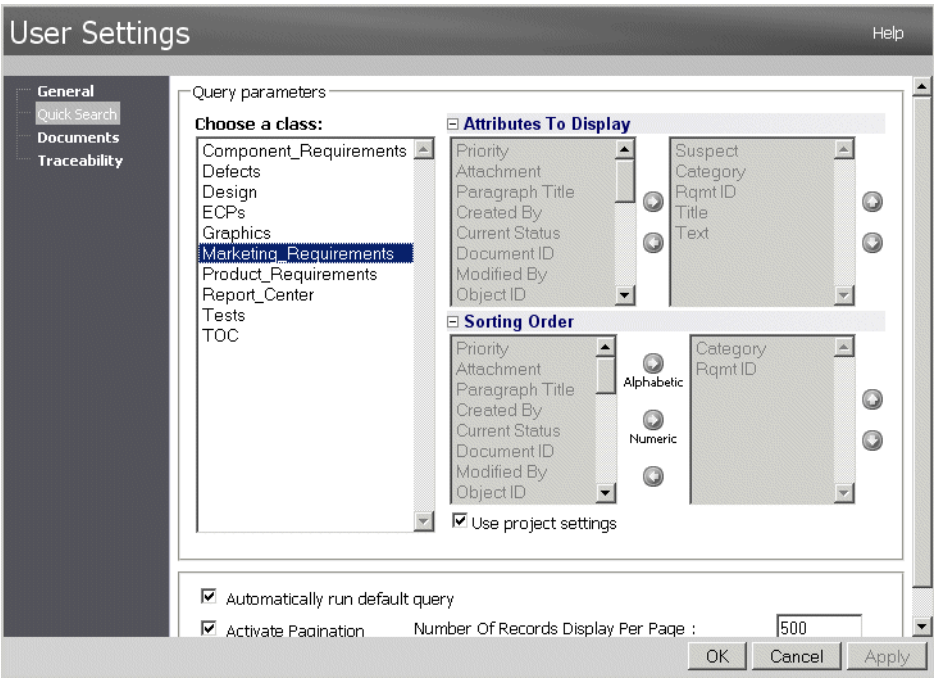
NOTE An administrator can change the project display properties for each class. For more information, see the *Serena Dimensions RM Administrator's Guide*.

To change the columns displayed in quick search results:

1 Click the **Settings** button at the bottom of the application window. The User Settings dialog box appears.

2 Select **Quick Search**.

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



NOTE You cannot select the attributes in **Attributes to Display** and **Sorting Order** sections if the **Use project settings** check box is selected.

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** Alphabetic for a simple alphabetic sort.
- **Numeric** 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 If you want to restore the default project display properties specified for the class, click the **Use project settings** check box.

This restores the display properties the administrator defined for the project and class, or the system display properties if the administrator did not change the properties.

7 Select the **Automatically run default query** check box if you want the quick search to run when you open Requirements View. This option is selected by default.

8 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.

Chapter 4

Managing Documents

Working in Documents View	36
Understanding the Navigation Tree	37
Understanding the Detail Pane	38
Printing from the Detail Pane	39
Working in Paragraph or Grid Layout	39
Creating a Document	42
Opening a Document	44
Editing a Document	44
Deleting a Document	45
Deleting a Requirement	45
Creating a Snapshot of a Document	46
Comparing a Document and Its Snapshot	47
Comparing Collections and Baselines	50
Publishing Microsoft Word Documents	51
Specifying Document Properties	54
Saving a Document with Another Name	55
Creating a Chapter	56
Editing a Chapter	58
Removing a Chapter	58
Adding a Requirement	59
Finding and Replacing Character Strings	60
Working with Limited Permissions	62
Merging Document Changes	63
Merging Chapter Changes	65

Working in Documents View

Documents View offers a perspective that lets you view and modify requirements in a hierarchical, document-like format. Documents consist of chapters, sub-chapters, and requirements.

Chapters and documents can contain requirements from multiple classes.

The requirements within a document can be from different categories. You may be unable to see all of the requirements in a document if you are in a group that does not have permissions for all of the categories.

There are four primary reasons to use Documents View to create, view, and edit information:

- Organizing requirements into a hierarchical, document-like structure
- Opening documents you imported using RM Import
- Creating structured Microsoft Word documents from your requirements
- Creating one or more baselines of a document and comparing one of the baselines to the document or to another baseline

IMPORTANT!

- Word uses unique, proprietary styles and formatting; therefore, the styles and formatting of the Word document (for example, some lists, bullets, and fonts) are not necessarily preserved in Documents View. However, RM Import always attempts to import the text to prevent data loss. See the Microsoft support site for more information about the limitations of converting a Word document to HTML.
- You cannot import the changes you make in Documents View back into the original Word document. Roundtripping between Dimensions RM and Word is not supported.
- Documents in Documents View are **NOT** the same as the Microsoft Word documents from which they were imported. Dimensions RM does not store the Word document; it parses the data into classes (requirements and so on) so the data is available to the entire project.

NOTE An administrator must add the Chapter class to the class definition diagram before you can access the Documents View. For more information, see the *Serena Dimensions RM Administrator's Guide*.

To navigate to the Documents View:

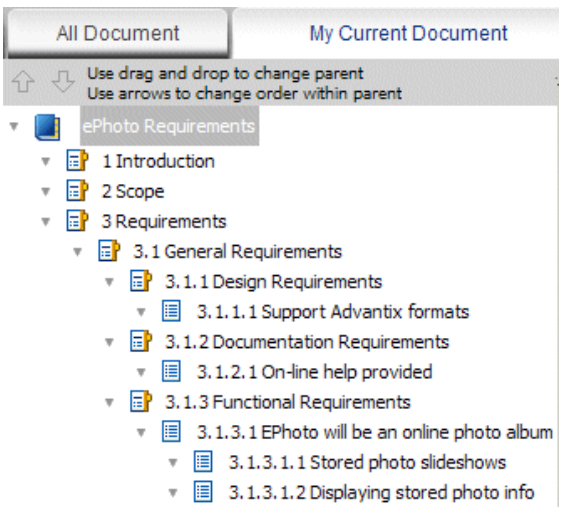
- Click the **Documents** tab.

The Documents View includes the following components.

Component	Description
Title Bar	Displays the name of the database, project, and view you are working in, and your user ID. The title bar also contains **Help**, **About**, and **Logout** links.
Command Bar	Provides commands that allow you to perform tasks in RM Browser.

Component	Description
Navigation Tree	Includes two tabs, the All Document and My Current Document tab. The All Document tab lists all documents that you can open. The My Current Document tab displays the contents of the currently open document. The table of contents includes the document name, the titles of all chapters contained in the document, and the titles of all subchapters and requirements contained in each chapter. For more information about the navigation tree, see "Understanding the Navigation Tree" on page 37. When you use the **Compare** command, the navigation tree also shows the union of a document and a snapshot or two snapshots, and indicates the changes between the documents.
Detail Pane	Shows information contained in the document, chapter, subchapter, or requirement that you selected in the navigation tree. For more information about the detail pane, see "Understanding the Detail Pane" on page 38. When you use the **Compare** command, the detail pane indicates the differences between the selected item in a document and in a snapshot that it is being compared to or between two snapshots that are being compared to each other.

Understanding the Navigation Tree



Note the following points about the navigation tree:

- At the top of the navigation tree you can display all documents or just the table of contents for your currently open document.
- Chapters and requirements are automatically numbered using a hierarchical numbered outline format.
- To move a requirement to another chapter, select the requirement name and drag it to the other chapter.
- To make a requirement a subrequirement of a requirement, select the requirement name and drag it to the requirement.

- Requirements are always shown before subchapters.
- To reorder a chapter within the parent chapter, select the chapter name and use the up or down arrows to move it to the new location. Use the same technique to reorder a requirement within a chapter or a subrequirement within a requirement.
- To make a chapter a subchapter of another chapter, select the chapter and drag it to the other chapter.
- The classes that the document or a chapter can include are displayed as a tool tip when you hover your cursor over the document or chapter title.
- The PUID and object ID of each requirement is displayed as a tool tip when you hover your cursor over the requirement name.
- A suspect link indicator is displayed next to each requirement that has suspect links. This image is informational only; clicking it does not remove the suspect status from the links.
- Requirements that are not part of any chapter but that exist in the document are displayed below all subchapters in the document.

Understanding the Detail Pane

The information that is displayed in the detail pane depends on what you select in the navigation tree. The following table describes the information that is displayed for each selection and the actions you can take from the resulting view of the detail pane.

Navigation Tree Selection	Icon	Content of Detail Pane
Chapter		Chapter title and description, followed by chapter requirements. You can view the requirements in grid layout or paragraph layout, and specify which attributes are displayed and the order in which they are displayed. For more information, see "Specifying Document Properties" on page 54 and "Working in Paragraph or Grid Layout" on page 39.
Requirement		List view of the selected requirement. An administrator can customize the format of this view. For details, see the information about customizing Web pages in the *Serena Dimensions RM Administrator's Guide*.
Document (root of tree)		Foreword. This includes information such as the title page that precedes the first chapter. It typically contains items such as the company logo, copyright information, and a history table. It does not include the table of contents. **NOTE:** When the document is published, the foreword is displayed before the table of contents.

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 tree in Documents View.

To print the contents of the detail pane:

1 Click **Print** at the top right corner of the detail pane. A dialog box that contains what is visible in the detail pane opens.

NOTE The contents of requirements sections are printed only if the sections are expanded from within the detail pane.

2 When the **Print** dialog box for your operating system opens, click **Print**.

Working in Paragraph or Grid Layout

You can specify that you want to work in paragraph layout or grid layout from the **Format Document** or **Format Chapter** dialog box. In paragraph layout, all non-text attributes are displayed after the title, then the description attribute, and then all text attributes. This is according to what you specify in the **Properties** dialog box.

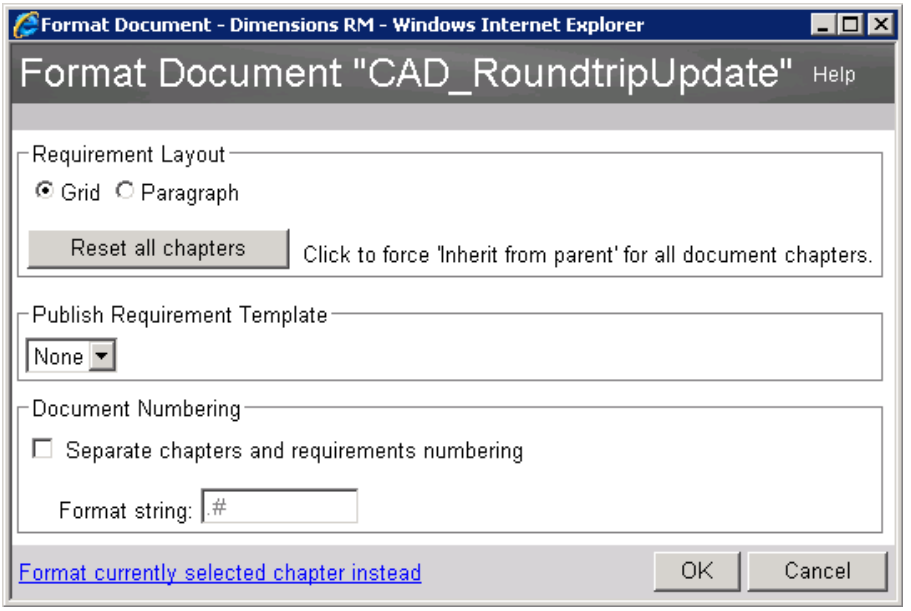
In grid layout, you can sort by column. The sort icon ▲ in the column header indicates that you are sorting on that column.

Specifying Document Format

You can specify whether the document uses grid or paragraph format. If the document uses paragraph format, 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 Click the **Additional toolbar buttons** button, then click the **Document Format** button. The **Format Document** dialog box 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.

2 To change the **Requirement Layout**, do one of the following:

- Select the **Grid** or **Paragraph** layout.

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. Only the Paragraph format is the available option in those cases.

- Click the **Reset all chapters** button to revert to the default settings. This causes all of the chapters in the document to inherit settings from their parents.

3 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.

4 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.

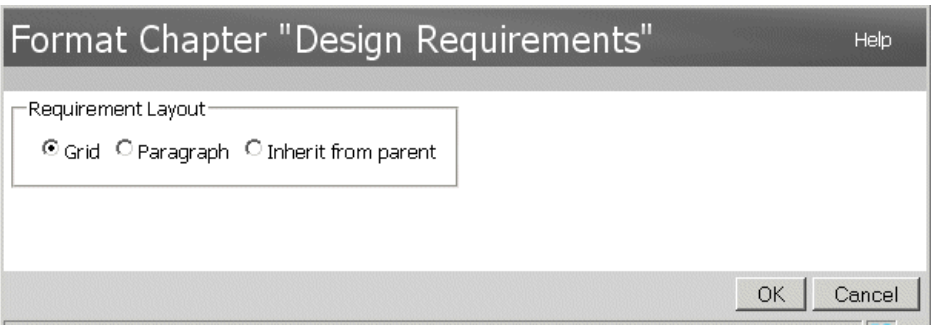
5 Click **OK**.

TIP Click the **Reload this document** button to see changes to numbering take effect.

Specifying Paragraph Layout or Grid Layout for a Chapter

To specify the layout you want for a chapter:

1 Click the **More** button and select **Format Chapter**. The **Format Chapter** dialog box opens.



2 Under **Requirement Layout**, select **Grid**, **Paragraph**, or **Inherit from Parent**.

Inherit from Parent is selected by default. If you choose to accept this option, the chapter inherits the layout from its parent chapter.

3 Click **OK**.

Creating a Document

You can create a new document from a blank template, or create a new document based on an existing document. If you create a new document based on an existing document, you can choose whether you want to copy the chapters only or both chapters and requirements.

To create a new document:

1 From the Documents view, click the **New Document** button. The **New Document** dialog box opens.

2 In the **Name** field, type the name of the document.

NOTE

- A document name can contain a maximum of 256 characters and cannot include single quotes (').
- The **New Document** command is only enabled if you have the "Create" permission for both the Chapter class and for collections. This lets you create a new document when you select **Blank** for the **Create Options**.
- When you are creating a new document based on an existing document (when you select **Chapters Only** or **Chapters and Requirements** for the **Create Options**), you must have the following additional permissions:
  - Chapter class: "Read"
  - Collections: "Link," "Create Based on Existing Collection"

3 *Optional* In the **Description** box, type a description of the document. The description is shown in the **Open Document** dialog box. The text may be truncated in the **Description** column of this dialog box; 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.
- An administrator specifies the maximum length of the **Description** field in the Chapter class in Class Definition.

4 Clear the **Publish Title** check box if you do not want the name of the document to appear in the title when you to publish the document.

5 From the **Category** list, choose a category to which to add the new document. A document can belong to any category to which you have access.

6 For **Create Options**, select one of the following:

- **Blank**—Lets you create a document from a blank template. When you select this option, the documents in the Template list are disabled. **Blank** is selected by default.
- **Chapters Only**—Lets you create a document from an existing document and copies the chapters only. Select the existing document from the **Template** list.
- **Chapters and Requirements**—Lets you create a document from an existing document and copies both the chapters and the requirements. Select the existing document from the **Template** list.

7 If you selected **Chapters Only** or **Chapters and Requirements**, the **Find template** field at the bottom of the dialog box is enabled. This lets you filter the documents so you can find them faster. Type a substring into the **Find template** box. The list of documents that is displayed is limited to documents that contain that substring.

8 Click the **Foreword** tab, and then click in the **Foreword** field. An HTML editor opens. Enter any information that would precede the table of contents.

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

9 Optionally click the **System Attributes** tab to display and modify system attributes for the document, such as the **Owner** and **Approval Status**.

10 Click **OK**.

Opening a Document

To open a document:

1 Click the All Documents tab in the Documents view.

2 Optionally choose a recently opened document from the Most Recent list.

3 Select a document from the list. You can optionally choose the specific category to which the document belongs in order to filter the list.

4 The search field at the bottom of the view lets you filter the list of documents so you can find them faster. Type a substring into the field. The list of documents that is displayed is limited to documents that contain that substring.

5 Select the document you want to open and click **Open**, or double-click the document.

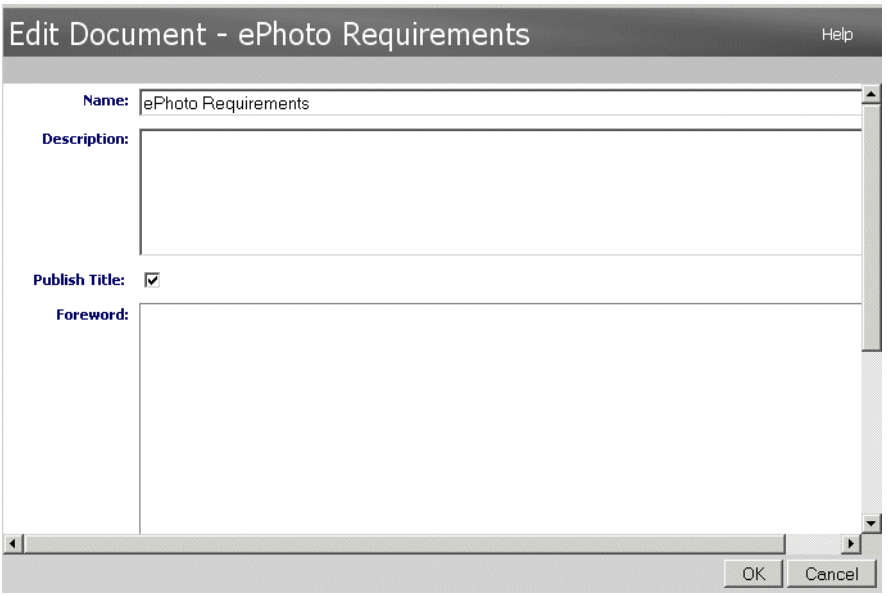
NOTE If you leave **Documents View** and then return to **Documents View**, the last document that you opened remains open. Also, if the document is currently opened and being edited by another user, you have the option to open it in read-only mode.

Editing a Document

To edit a document:

1 Select the document node at the top of the table of contents on the **My Current Document** tab on the **Documents** view.

2 Click the **Edit** button at the top right of the detail pane. The **Edit Document** dialog box opens.



3 Change the **Name, Description,** and **Foreword** fields as needed. You can also select or clear the **Publish Title** check box.

4 Click **OK**.

Deleting a Document

To delete a document:

1 Click the **More** button, then click the **Delete Document** button.

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

2 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

To delete a requirement from a document:

1 Select the requirement.

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

You can work on a document for a period of time and then create a snapshot of it. When you create a snapshot of a document, you are actually creating a baseline of it, so snapshots are read-only.

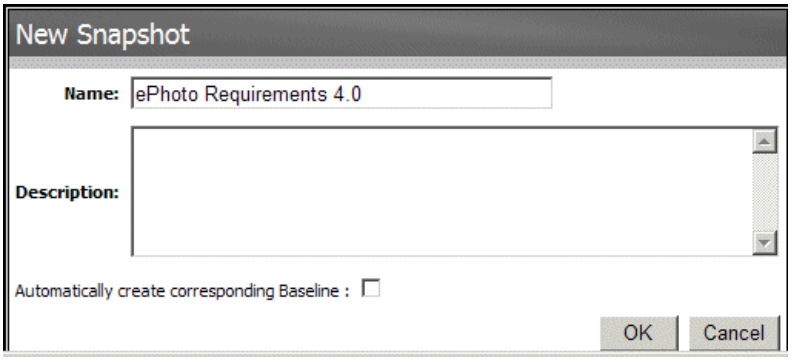
NOTE

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

To create a snapshot of a document:

1 Click the **More** button, then click the Snapshots button. The **Snapshots** dialog box opens.

2 To create a new snapshot, click **New Snapshot**. The **New Snapshot** dialog box opens, which lets you change the name (if desired) and change the description of the snapshot.



The description is shown in the **Snapshots** dialog box. The text may be truncated in the **Description** column of this dialog box; however, it is shown in its entirety in the tooltip that appears when you hover your mouse over the description.

NOTE An administrator specifies the maximum length of the **Description** field in the Chapter class in Class Definition.

Optionally select the **Automatically create corresponding baseline** option if you want to create a baseline at the same time that comprises the same data.

After you click **OK** in the **New Snapshot** dialog box, an entry that contains the document name and version, description, creation date, and author is added to the dialog box.

3 To open a snapshot to view it, select the version and then click **Open**. The document opens.

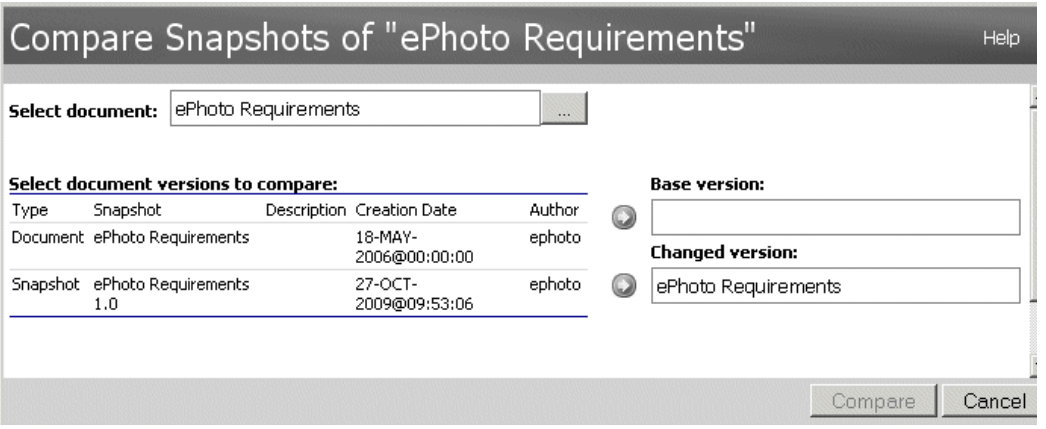
4 To modify a snapshot, select the version and then click **Modify**. The **Modify Snapshot** dialog box opens, which lets you modify the name and description.

Comparing a Document and Its Snapshot

You can compare a document and one of its snapshots or compare two snapshots of the same document. Visual indications of the changes in the navigation tree and detail pane in Documents View let you quickly identify the changes between the two.

To compare a document and its snapshot:

1 Click the **More** button and then click the **Compare Documents** button. The **Compare Snapshots** dialog box opens.



2 If a document is open when you open this dialog box, its name is displayed in the **Select document** box. If no document is open or if you want to open another document to compare, click the browse (…) button. The **Open Document** dialog box opens. Select a document and then click **Open**. The **Open Document** dialog box closes, and the document you selected is now displayed in the **Select document** box.

3 The selected document and a list of all snapshots for the selected document are listed in the **Compare Snapshots** dialog box. Do the following:

   a Select the snapshot or document that you want to be the basis for the comparison, and click the right arrow button to the left of the **Base version** box.

   b Select the snapshot or document that you want to compare with the base version, and click the right arrow button to the left of the **Changed version** box.

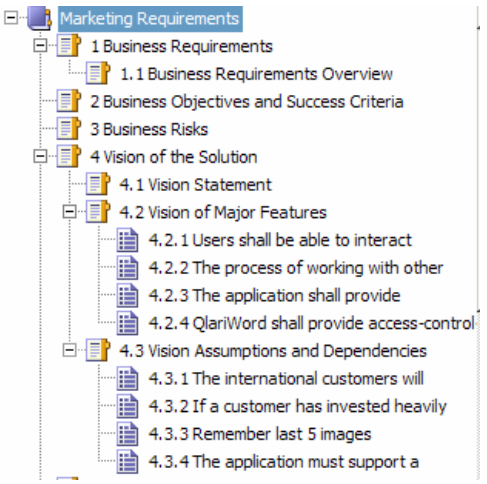
4 Click **Compare**. The **Compare Snapshots** dialog box closes. The navigation tree of Documents View contains the union of all of the chapters in the two documents, and the detail pane contains a **Requirement Difference Summary**. For more information about the **Requirement Difference Summary**, see "Working with the Requirement Difference Summary" on page 49.

Note the following:

- An icon in the navigation tree indicates if the chapter or requirement was added, removed, moved, changed, or unchanged.

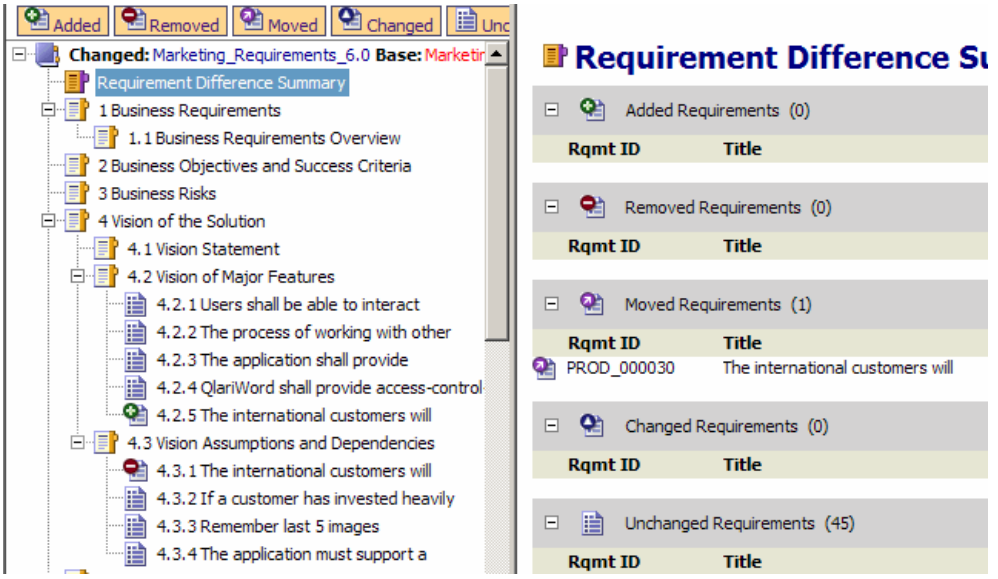
- The changes for the chapter account only for the chapter description, not for the requirements in the chapter. Therefore, if a description of a chapter did not change, but subchapters or requirements in the chapter changed, the chapter icon indicates that the chapter is unchanged.
- If the title of a chapter or requirement is different in the two documents, both titles are displayed in the navigation tree.
- When a chapter is selected in the navigation tree, the detail pane shows requirements in the grid view. 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.
- The suspect links icon is not shown in the navigation tree or detail pane.
- When you select a changed requirement in the navigation tree:
  - 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).

  For example, consider the following tree from a base document, for which you create a snapshot called "base".



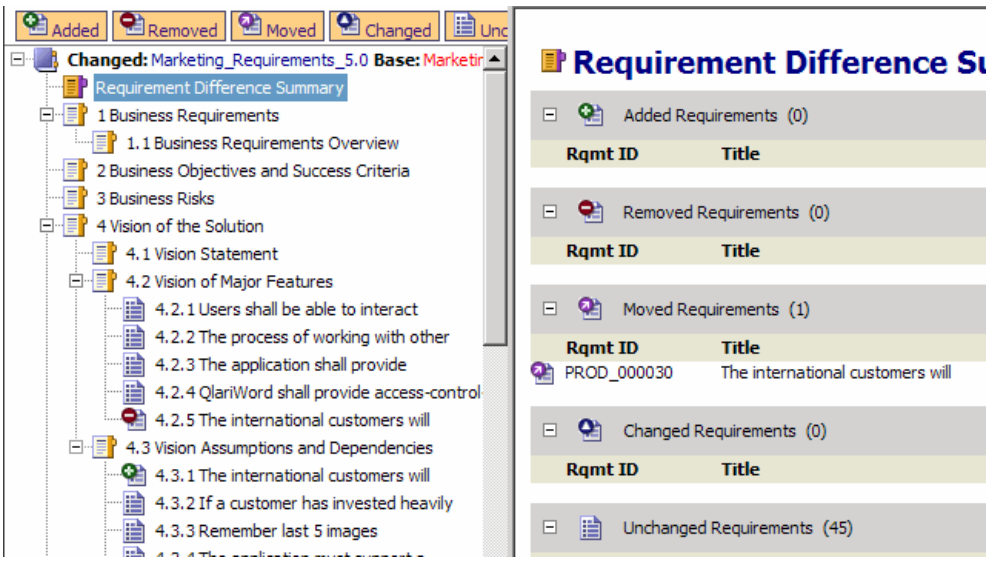
  Now suppose you drag a requirement from Chapter 4.3 to Chapter 4.2, and create another snapshot called "new." Do a comparison with "base" as the base document.

The requirement appears to be added to Chapter 4.2 and removed from Chapter 4.3. Note that in the detail pane, the requirement is listed under **Moved Requirements**.



Now, do a comparison with "new" as the base document.

The requirement will appear to have been removed from Chapter 4.2 and added to Chapter 4.3.



- The tabs at the top of the navigation tree reflect changes in the detail pane, not in the navigation tree.

Working with the Requirement Difference Summary

The **Requirement Difference Summary** is a special chapter that is displayed before all other chapters in the navigation tree. When this chapter is selected in the navigation tree, 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 view the Requirement Difference Summary:

- Do one of the following:
  - Click **Requirement Difference Summary** in the navigation tree.

    All five sections are expanded in the detail pane.
  - Click one or more of the tabs at the top of the navigation tree.

    The section or sections that correspond to the tab or tabs you clicked are expanded in the detail pane.

Publishing the Document Differences Report

The **Publish** command lets you publish a Microsoft Word document from Documents View, as described in "Publishing Microsoft Word Documents" on page 51. 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 Documents View.

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

- Click a document or snapshot link next to **Go to:** in the top right corner of the detail pane.

  The normal Documents View of the document or snapshot is displayed. Because snapshots are read-only, their chapters, subchapters, and requirements are dimmed in the navigation tree.

Comparing Collections and Baselines

You can compare two collections, two baselines, or one baseline and one collection. When multiple versions of a requirement are found in a container, the requirement with the highest Object Version ID (and therefore the most recent version of the requirement) is used for the comparison.

To compare collections and baselines:

1. In the **Requirements** View, click the **Compare** button. The **Compare Containers** dialog box opens.
2. For each **Select Container** box, click the **Browse** button on the right.

3. Select a container from the list. To quickly find a container, type the name in the **Find Container** box.
4. Click **OK**.
5. *Optional* To display the description in the comparison results, select the **Description** dialog box.
6. Click **Compare**. The **Requirement Difference Summary** is appears. 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 first container, but not in the second 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.
7. *Optional* You can double-click a requirement to view it in the **Documents View Details Frame** dialog box.
8. *Optional* To print the **Requirement Difference Summary**, click **Print**.

Publishing Microsoft Word Documents

You can publish Microsoft Word documents from the **Documents** View. the **Documents** View contains all of the information needed for a Word document:

- The document name becomes the name of the Word document.
- The chapter name becomes the title of the Word document, unless you cleared the **Publish Title** check box in the **New Document** or **Edit Document** dialog box.
- The navigation tree becomes the table of contents for the Word document.
- The content and layout in the detail pane and paragraph layout 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.
- After publication, if you are using Word 2007, you could 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 a Microsoft Word document:

1. Click **Publish** on the **Documents** view. The **Publish Document** dialog box prompts whether you want to publish the document.
2. After the document has been published, it is downloaded to your system and you can open it.

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. For more information, see "Specifying Document Format" on page 39 and the *Serena Dimensions RM Administrator's Guide*.

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 54.

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.

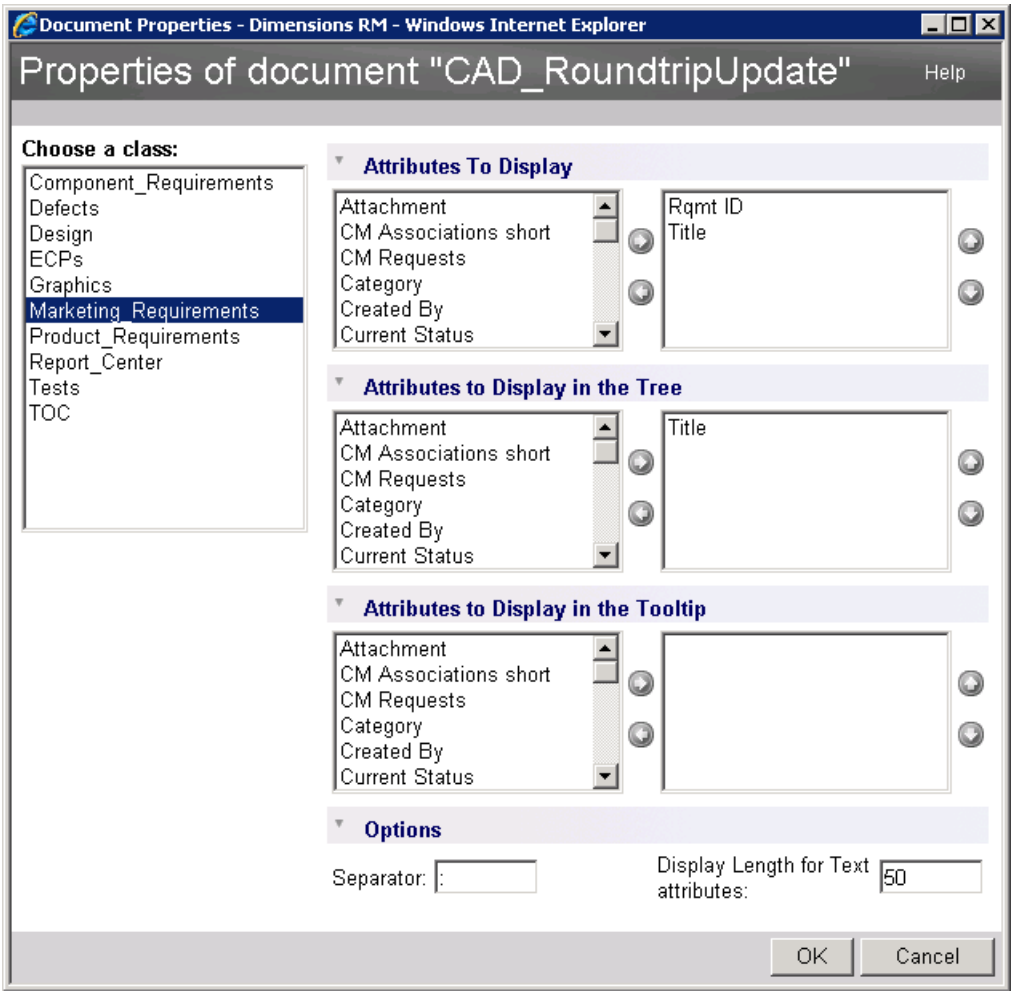
Specifying Document Properties

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 On the **Documents** view, click the **More** button and click the **Document Properties** button. The **Properties of document** dialog box opens.



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

3 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.

4 To specify the attributes to display in the Navigation Tree 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 Tree 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.

5 To specify the attributes to display in the Navigation Tree 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 Tree 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 Click **OK**.

Saving a Document with Another Name

You can open an existing document and perform a "save as" operation on it to make a copy of the document with another name. This lets you reuse document structures or whole documents.

You can create a new document based on an existing document using either of the following two commands under **Document** on the command bar:

- **Save As**
- **Create**

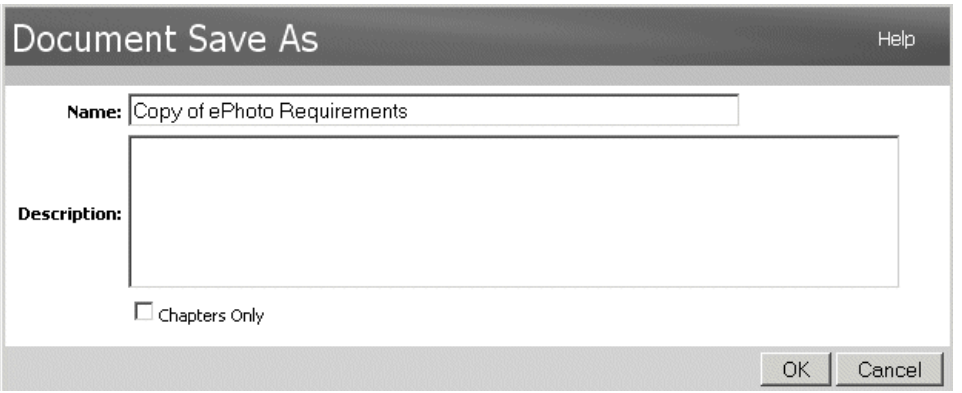
NOTE You cannot perform this operation on document snapshots.

This section describes how to use the **Save As** command. For information about using the **Create** command, see "Creating a Document" on page 42.

To save a document with another name:

1 In the **Documents** view, open the document you want to save with another name.

2 Click the **More** button and then click the **Save As.** The **Document Save As** dialog box opens. "Copy of" is prepended to the existing document name.



NOTE The Save As command is disabled if the Create command is disabled. The **Document Save As** command is only enabled if you have the following permissions:

- Chapter class: "Create" and "Read"
- Collections: "Create," "Link," "Create Based on Existing Collection"

3 In the **Name** box, type a name for the document.

4 *Optional* In the **Description** box, enter a description of the document.

5 By default, chapters and requirements are copied. If you only want to copy chapters, select the **Chapters Only** check box.

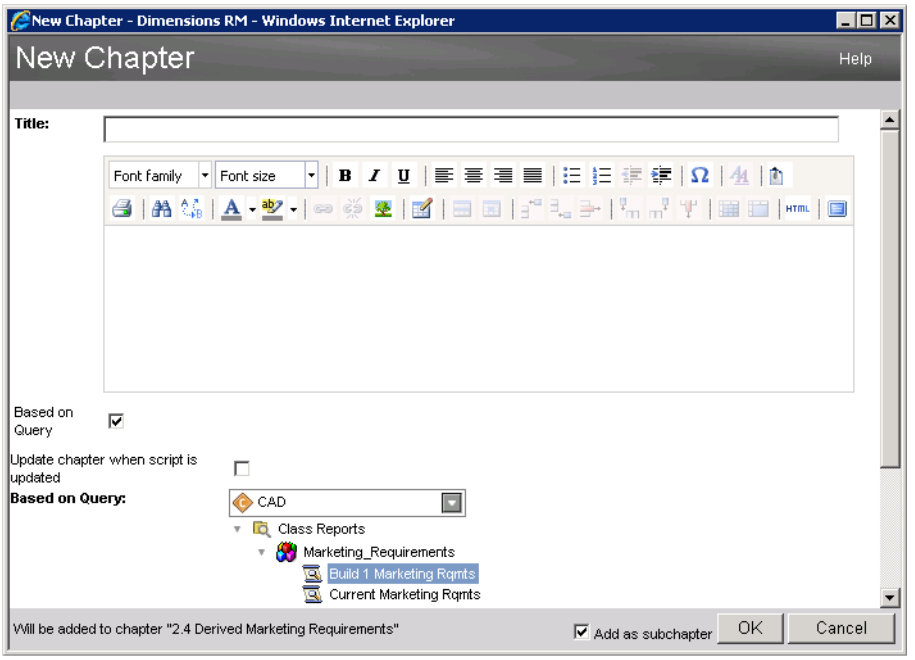
Creating a Chapter

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 In the **Documents** view, select the document in the navigation tree.

2 Click **Create Chapter**. The **New Chapter** dialog box 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. In the **Documents** view, select a chapter or a requirement in the navigation tree.
2. In the detail pane, click the **Edit** button to the right of the chapter name and description. The **Edit Chapter** dialog box opens.
3. Type the new title, description, or both.
4. 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.

5. 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.

6. Click **OK**.

Removing a Chapter

CAUTION! When you remove a chapter, subchapters are also removed, and requirements are removed from the document.

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.

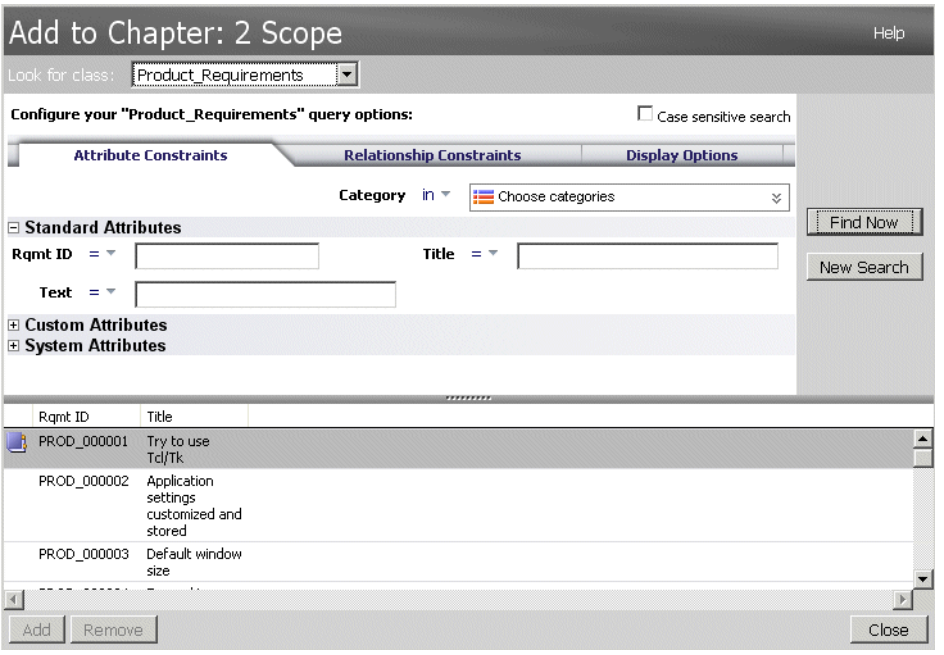
NOTE When you click **Delete**, the chapter is actually *removed*, not deleted. This means that the chapter is removed from the project. The **Delete** command is only enabled if you have the "Remove" permission for the Chapter class.

Adding a Requirement

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 a requirement:

1. In the **Documents** view, select the chapter to which you want to add the requirement.
2. Click the **Add** button. The **Add to Chapter** dialog box opens.
3. Select a class in the **Look for class** list.



4. If you want to specify constraints, do so on the **Attribute Constraints** tab, **Relationship Constraints** tab, or both.
5. If you want to specify the display order, specify display options on the **Display Options** tab.
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. If you want to change the search criteria, click **New Search** on any tab. Default values are stored on the **Attribute Constraints** and **Relationship Constraints** tabs.
8. To run the search, click **Find Now** on any tab. The results are displayed at the bottom of the dialog box.

9 Select the requirement or requirements you want to include in the chapter, and click **Add**. An icon that is displayed to the left of the requirement indicates that it is included in the chapter.

NOTE If you add a requirement to the document itself instead of to a chapter, the requirement is displayed at the bottom of the navigation tree.

10 If you selected a requirement in the navigation tree when you clicked **Add**, an **Add as subrequirement** check box is displayed at the bottom of the dialog box. Select this check box if you want the requirement to be a subrequirement of the selected requirement.

11 To remove a requirement or requirements from the chapter, select the requirement or requirements and then click **Remove**.

NOTE

- A chapter icon is displayed next to the requirement if the requirement is in the chapter (including the root chapter) to which you are adding requirements.
- A document icon is displayed next to the requirement if the requirement is included in the document but is not in the chapter to which you are adding requirements.
- No image is displayed if the requirement is not in 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 a Document and Its Snapshot" on page 47).
- For snapshots, the **Replace** and **Replace All** buttons are disabled; with snapshots, you only have the ability to search for strings.

To find and replace character strings:

1 Open the document in which you want to search, if it is not already open.

2 Click the More button and click the **Find and Replace** button. The **Find and Replace** dialog box opens.

3 In the **Find what** box, type the string for which you want to search.

4 If you want to replace the string, type the new string in the **Replace with** box.

5 Select the **Match case** check box if you want to match the case of the string for which you want to search.

6 Under **Find and Replace in**, select one of the following:

- **Selected chapter** to search only the selected chapter
- **All chapters** to search all chapters

Selected chapter is selected by default. With either selection, the subchapters and requirements contained in them are also searched.

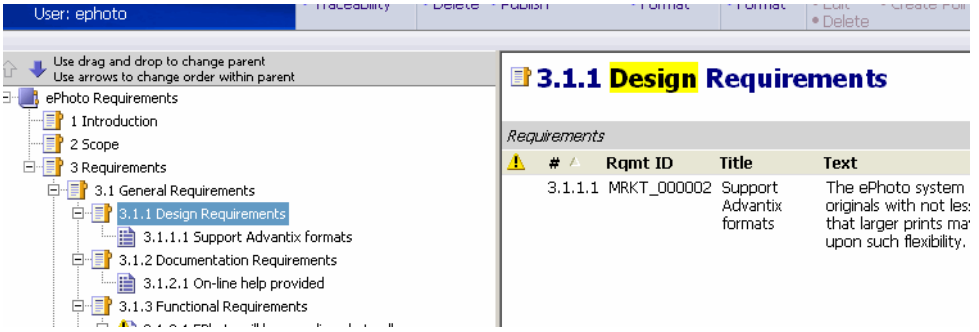
NOTE The title of the root chapter is not searched.

7 Also 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

Title and description is selected by default.

8 Click **Find Next**. The search shows the first chapter or requirement containing one or more instances of the string. The chapter or requirement is selected in the tree pane, and the found string is highlighted in the detail pane.



NOTE The **Edit** button is enabled on the requirement in the detail pane when the **Find and Replace** dialog box is open, so you can change the requirement if you do not want to perform the replace operation yet.

9 Click **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.

NOTE 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.

10 If you want to replace all chapters and requirements containing the string you specified in the **Find what** box with the string you specified in the **Replace with** box, click **Replace All**.

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

11 To cancel the **Find Next** operation, click **Cancel**.

NOTE The **Replace** and **Replace All** operations cannot be canceled.

Working with Limited Permissions

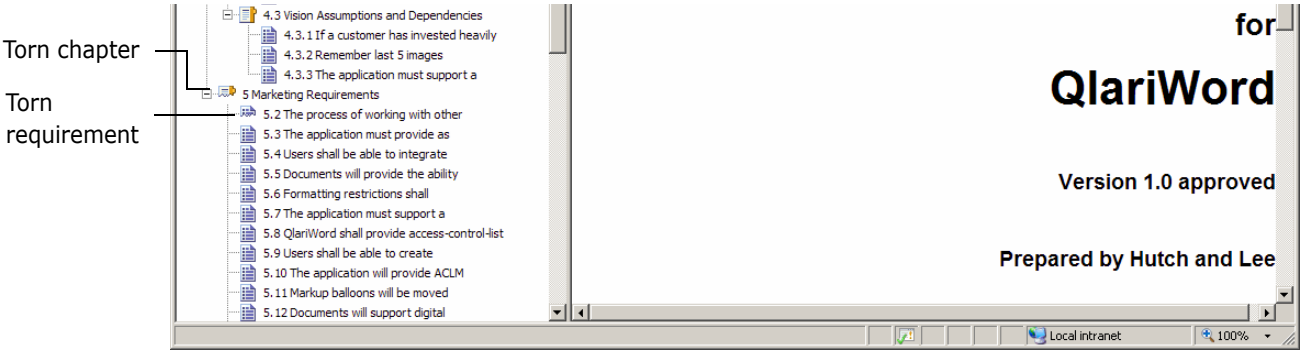
If you navigate to Documents View and one or more of the requirements in the chapter belongs to a class to which you do not have "read" permission, or if one or more requirements belong to a category to which you do not have permission, the following occurs:

- 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

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).

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*.

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.

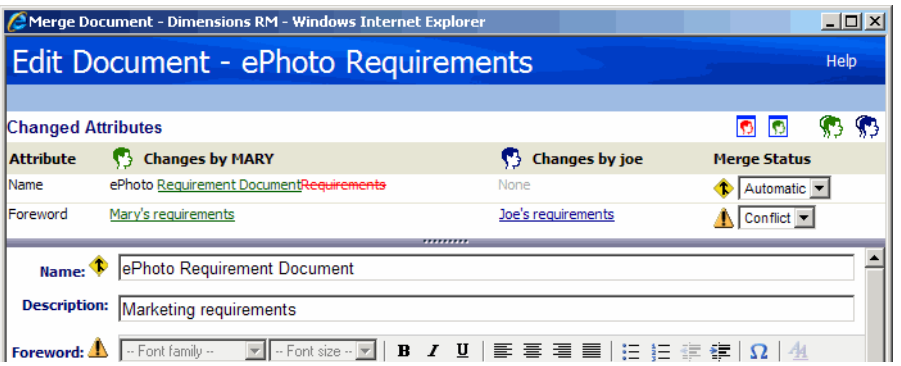
Change Type	Description
Automatic	When the change made by the first user is the same as the change made by the second user or when the change made by the first user is distinct from any change made by the second user, automatic merging can occur because a review of the change is not strictly necessary. 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 box

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 box. The **Edit Document** dialog box closes.
3. The second user clicks **OK** in the **Edit Document** dialog box.
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 box becomes the **Merge Document** dialog box. The **Merge Document** dialog box differs from the **Edit Document** dialog box in that the **Merge Document** dialog box:
   - 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 box to resolve the changes as described in "Viewing Prior Versions of the Document" on page 65 and "Merging Changes" on page 65.

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 box.

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

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.

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*.

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 box.

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

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.

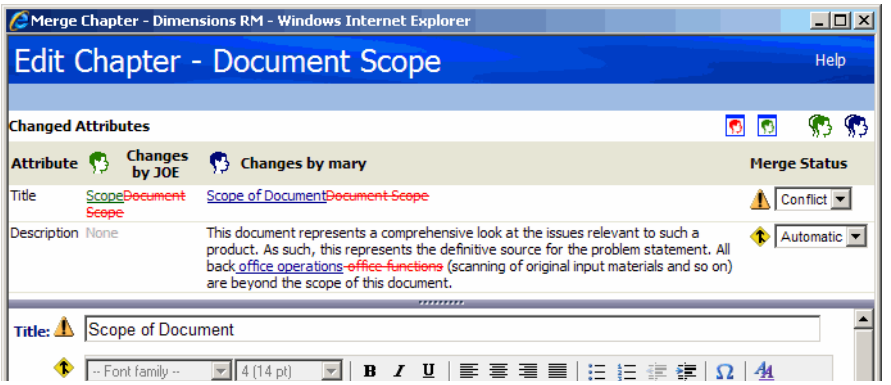
5 The second user clicks **OK** on the notification message. The **Edit Chapter** dialog box becomes the Merge Chapter dialog box. The **Merge Chapter** dialog box differs from the **Edit Chapter** dialog box in that the **Merge Chapter** dialog box:

- 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 box to resolve the changes as described in "Viewing Prior Versions of the Chapter" on page 67 and "Merging Changes" on page 67.

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 box.



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 box.

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 box.

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**.

Chapter 5

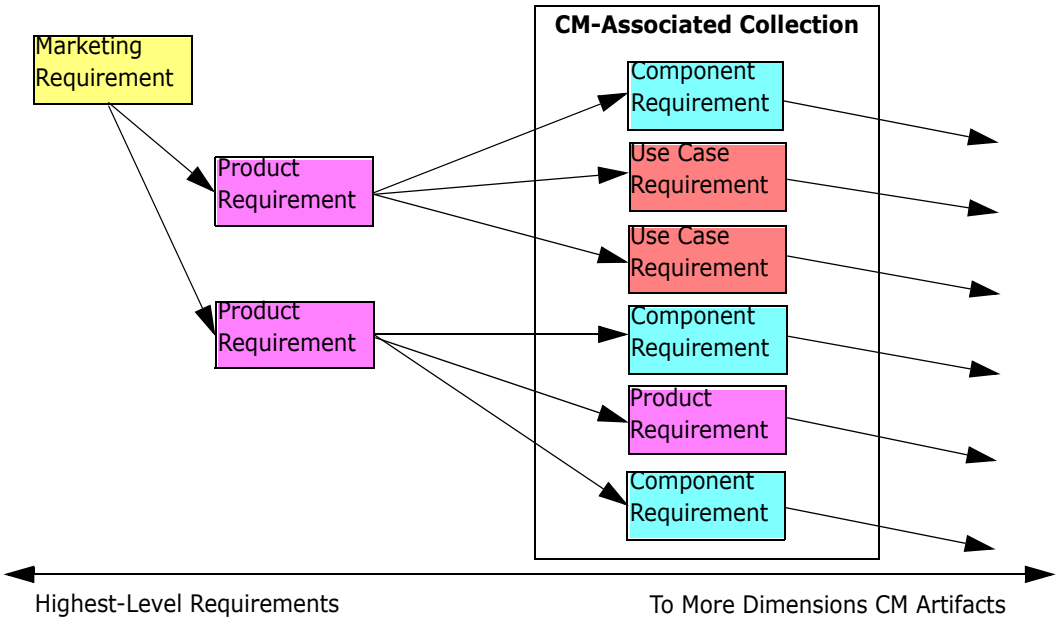
Using the Traceability View

Working in Traceability View	70
Understanding the Traceability Tree	71
Setting Traceability Options	72
Printing Requirements	72
Creating a New Traceability Report	73
Specifying Classes to Display	74
Opening a Report	75
Deleting a Report	75
Printing a Report	76
Editing a Report	76
Customizing the Traceability Tree	77

Working in Traceability View

Traceability is a way to analyze the linkages between requirements. Traceability View 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.



Traceability View 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.

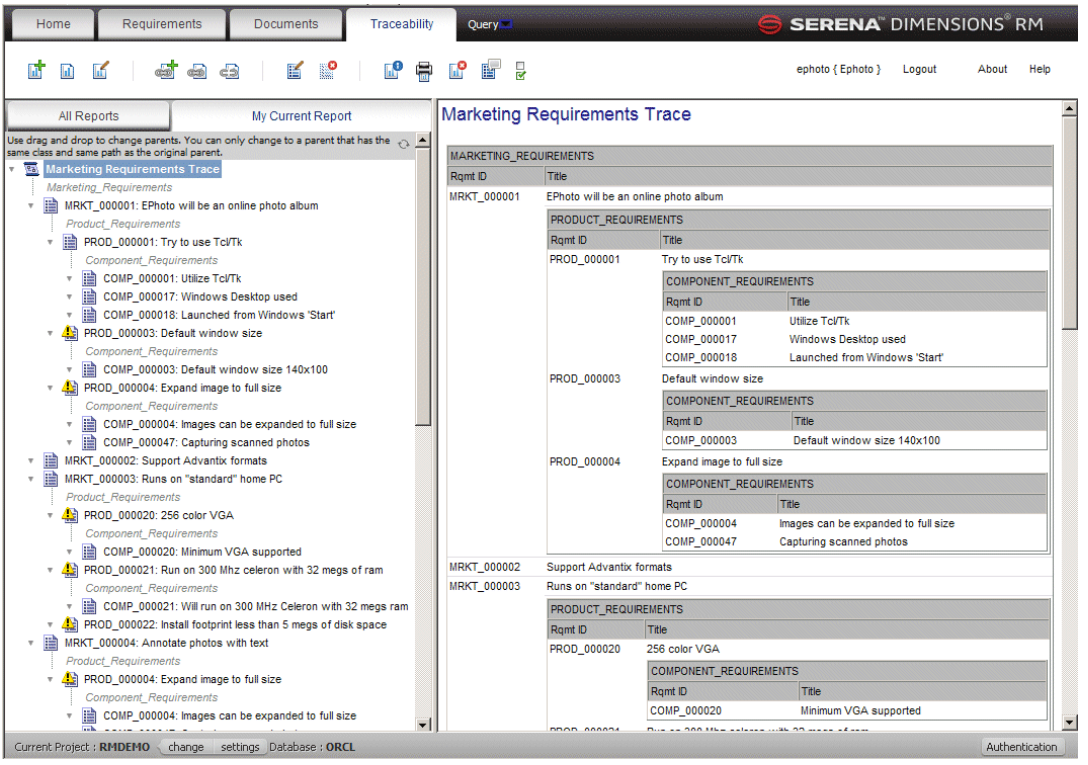
NOTE Permissions for traceability reports are treated the same way as permissions for scripts. If you do not have permission to create a script on the project level, then you will be unable to create a traceability report. If you do not have permission to read a script on a project level, then you will be unable to open a traceability report, unless you created the report. In RM Explorer, you can assign specific permissions to individual traceability reports.

To navigate to Traceability View:

- Click the **Traceability** view.

Traceability View includes the components described in the following table and shown in the illustration that follows.

Component	Description
Title Bar	Displays the name of the database, project, and view you are working in, and your user ID. The title bar also contains **Help**, **About**, and **Logout** links.
Command Bar	Provides commands that allow you to perform tasks in RM Browser.
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 71.
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 77.
- 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 77.
- 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.

Setting Traceability Options

From the User Settings dialog box you can configure default behavior for the Traceability view.

Click the ***Settings*** button, then select **Traceability** from the Project Settings dialog box. From here, choose the **Automatically load the last active report** option to always load whatever report you were viewing the last time you used the **Traceability** view. Click **OK** to apply the setting. When this option is not selected, all reports will be loaded.

Printing Requirements

You can print requirements directly from the detail pane of Traceability View.

To print requirements:

1. Select a requirement in the traceability tree. Its content is displayed in the detail pane.
2. Expand the sections that you want to print. Sections that are not expanded will not be printed.
3. Click **Print** at the top right corner of the detail pane. A dialog box that shows the requirement content opens.
4. The print dialog box for your operating system opens. Click **Print**.

Creating a New Traceability Report

To create a new traceability report:

1. On the **Traceability** view, click **Create Report**.

   The **New Traceability Report** dialog box opens to the **General** tab.
2. In the **Top-level class** list, select the root class for the traceability report.
3. Click the **View Script** button at any time to see and edit the report script directly. When in this mode, click the **View Wizard** button to toggle back to the New Traceability Report wizard.
4. If you want to save the report, enter a name and optionally a description for it.

   NOTE If you complete the fields described in this step, the **Run** button changes to **Save As and Run**.
5. In the **Category** list, select the category in which the traceability report will be saved.
6. At any time, click the **View Script** button to see the script underlying the report you are defining. Click the **View Wizard** button to return to the wizard view.
7. Perform the following steps on the **Relationship Constraints** tab:

   a Specify whether the requirements should be in entities such as collections, baselines, and documents.

   b Specify the following:

   - Whether the category or categories should be stored as part of the query or entered by the user at runtime (script execution time).
   - Whether the requirement should be in a selected category. (The category for a requirement will always be "not null.")
8. On the **Related Classes to Display** tab, specify the classes to include in the report.
9. On the **Attribute Constraints** tab, specify constraints for the requirements from the top-level class.
10. On the **Display Options** tab, specify which attributes are displayed in Requirements View after you run a traceability report. You can also choose how to order requirements in the report, or choose the **Manual order** check-box if you want to be

able to manually order requirements in the report rather than automatically order them.

11 To run the query without closing the dialog box, click **Preview** on any tab.

12 To run the query, click **Run** (or **Save As and Run**) on any tab.

Specifying Classes to Display

The **Related Classes to Display** tab initially shows all the classes that are in a relationship with the top-level class. These are known as parent classes. As you expand parent classes, the classes that are in a relationship with the parent classes are shown.

You can hover over the class name to see the name of the relationship. If there is more than one relationship for a class, the class name is displayed multiple times, with the relationship name in parentheses following the class name.

To specify the classes to display:

1 Click the **Related Classes to Display** tab.

2 Select the check boxes next to the classes to specify the relationships that should be displayed in the traceability report.

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.

NOTE You do not have to select consecutive classes.

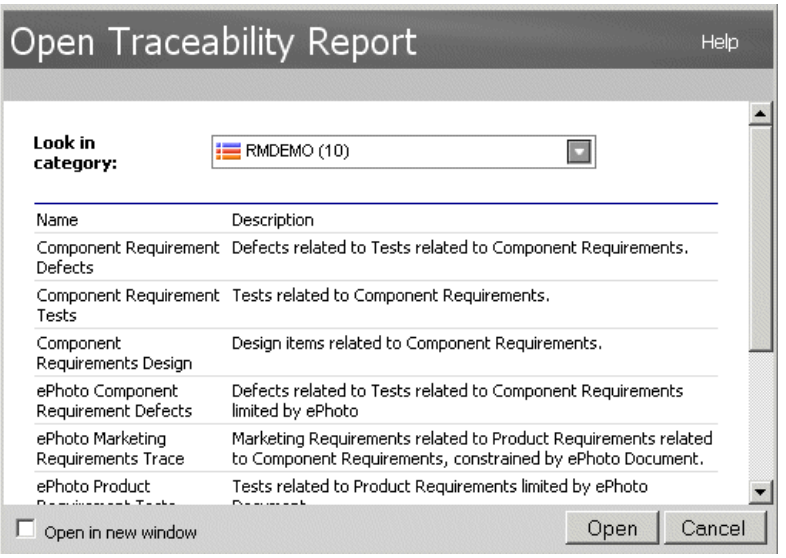
3 Select the **"Current" requirements only** check box if you want the traceability report to include only requirements that have a current status of "current."

Opening a Report

To open a traceability report:

1 On the **Traceability** view, click **Open Report**.

The **Open Traceability Report** dialog box opens. The number in parentheses in the **Look in Category** list indicates the number of reports that are available.



2 In the **Look in category** list, select the category from which you want to choose the traceability report.

3 Select the traceability report you want to open.

4 To open the report in a new window, select the **Open in new window** option.

5 Click **Open**.

NOTE The next time you navigate to Traceability View, this report (that is, the last report that was open) opens automatically.

Deleting a Report

To delete a traceability report:

1 On the **Traceability** view, 0pen the report you want to delete, if it is not already open.

2 Click the **Delete Report** button.

3 When prompted, confirm that you want to delete the report.

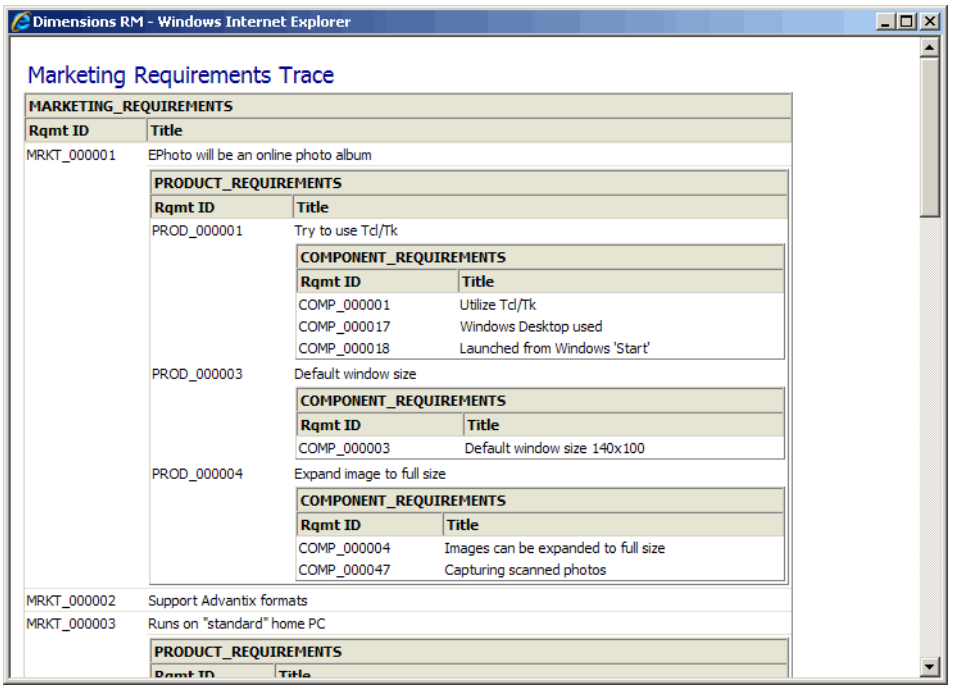
Printing a Report

When you print a traceability report, a "print to fit" format is used. This report has the same formatting as a report that you would print from Requirements View using the **Print to Fit** command.

To print a traceability report:

1. On the **Traceability** view, open the report you want to print, if it is not already open.
2. Click the **Print Report** button.

   The report opens in a "print to fit" format.



3. In the **Print** dialog box that opens, specify settings, and then click **Print**.

Editing a Report

To edit a traceability report:

1. Open the traceability report you want to edit, if it is not already open.
2. Click **Edit Report**. The **Edit Traceability Report** dialog box opens to the **General** tab.
3. Change the information on the **General** tab as needed.
4. Click the **View Script** button at any time to see and edit the report script directly. When in this mode, click the **View Wizard** button to toggle back to the New Traceability Report wizard.
5. Perform the following steps on the **Relationship Constraints** tab, as needed:

   a Change whether the requirements should be in entities such as collections, baselines, and documents.

   b Change whether the category or categories should be stored as part of the query or entered by the user at runtime (script execution time).

   c Change whether the requirements should be in a selected category or categories.

6. On the **Related Classes to Display** tab, change the classes that have relationships with the top-level class that you want to include in the report, as needed.

7. On the **Attribute Constraints** tab, change the constraints for the requirements from the top-level class, as needed.

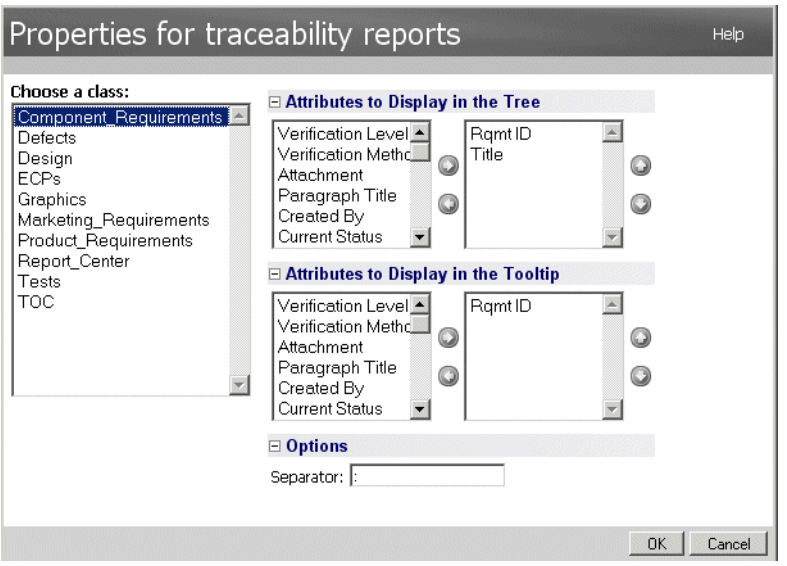
8. On the **Display Options** tab, change the attributes that are displayed in Requirements View after you run a traceability report. You can also choose how to order requirements in the report, or choose the **Manual order** check-box if you want to be able to manually order requirements in the report rather than automatically order them.

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 (:).

Manually Ordering Requirements in Traceability Reports

If you have set the **Manual order** display option for a traceability report, you can manually order requirements in the traceability tree in any order you would like. For information on setting the **Manual order** option, see "Creating a New Traceability Report" on page 73 and "Editing a Report" on page 76.

To manually order requirements in a traceability report:

1 Select the requirement in the traceability tree.

2 Click the up and down arrows at the top of the tree to move the requirement.

Chapter 6

Managing Reports

Managing Reports	82
Running an Existing Class, Relationship, or Traceability Report	82
Creating a Class Report	83
Creating a Relationship Report	85
Creating a Traceability Report	87
Editing a Report	87
Query Dialog Boxes	89

Managing Reports

You can move or copy a report to another category, and delete a report.

To move a report to another category:

1. Click the **Reports** tab in the Requirements view.
2. Select the report.
3. Click the **Query** link at the top of the application window and select Edit.
4. On the Query dialog box, select the new category from the Category list.
5. Click **Save and Run**.

To delete a report:

1. Click the **Reports** tab in the Requirements view.
2. Select the report.
3. Click the **Delete** button.

Running an Existing Class, Relationship, or Traceability Report

Filters are queries that are limited to only one class. Scripts are more complex queries that include one or more classes.

NOTES You can use RM Browser or RM Explorer to edit scripts and filters, and you can use RM Browser or RM Concept to edit scripts. For information on using RM Browser to do this, see "Editing a Report" on page 87. You use RM Browser to edit traceability reports.

Running Reports

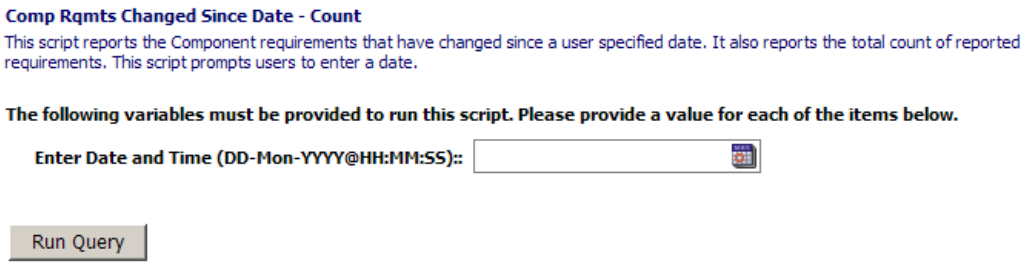
You run reports from your Home page or Requirements View.

NOTES If you do not have Create permission for scripts, you can create a script but cannot save it.

To run a report from your Home page:

1. Expand a section, or click the refresh button on a section that is already expanded.

2 If the script has prompts, enter the information that is requested, and then click **Run Query**. An illustration of a prompt follows.



Note the following:

- The report name and description are displayed above the prompt.
- If the report contains simple prompts (that is, prompts without custom prompt strings), instructions can be included within the description.
- If the attribute being prompted for has a default value specified in its definition, that value is populated in the prompt field.

The query results appear in the expanded section.

To run a report from Requirements View:

1 Select the **Reports** tab and Click a report under **Class Reports**, **Relationship Reports** or **Traceability Reports**.

If the report has prompts, enter the information that is requested, and then click **Run Query**. For an illustration of a prompt and details about it, see the preceding procedure that shows you how to run a script from your Home page.

The query results appear in the content pane on the right side of the page.

Creating a Class Report

Complete these steps to create a class report.

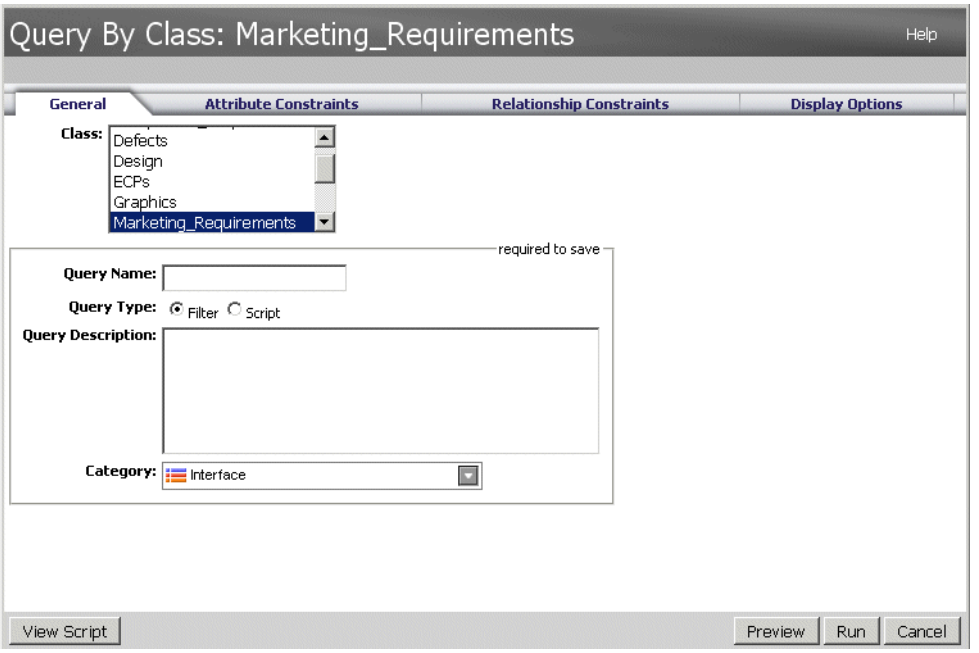
CAUTION! If you do not have "read" permission in a category, the requirements in that category are not returned in the query results, even though they satisfy the query requirements.

To create a class report:

1 On the **Requirements** view, click the **Categories** tab.

2 Select the category for which you will create a class report.

3 Click the **Query** link at the top of the application window and select By Class. The **Query by Class** dialog box opens to the **General** tab.



4 Select a class from the **Class** list.

NOTE If a requirement of a class is selected in the Requirements View when you open the dialog box, then the class is already selected.

5 If you want to save the query:

a Type a name in the **Query Name** box.

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 Home 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. If you complete the fields described in this step, the **Run** button changes to **Run and Save**.

6 To specify constraints, complete the **Attribute Constraints** tab, **Relationship Constraints** tab, or both. See "Attribute Constraints Tab" on page 90 and "Relationship Constraints Tab" on page 93 for instructions.

7 To specify display options, complete the **Display Options** tab. See "Display Options Tab" on page 97 for instructions.

8 To run the query without closing the dialog box, click **Preview** on any tab.

9 To run the query, click **Run** (or **Run and Save**) on any tab. The query results are displayed in Requirements View. As long as you remain in Requirements View, you can click **Query Results** in the tree and view the results again.

10 To view the raw SQL-like code that underlies the query, click **View Script** on any tab. For more information, see "Editing a Report" on page 87.

Creating a Relationship Report

NOTES You can create a report if you do not have Create permission for scripts, but you cannot save it.

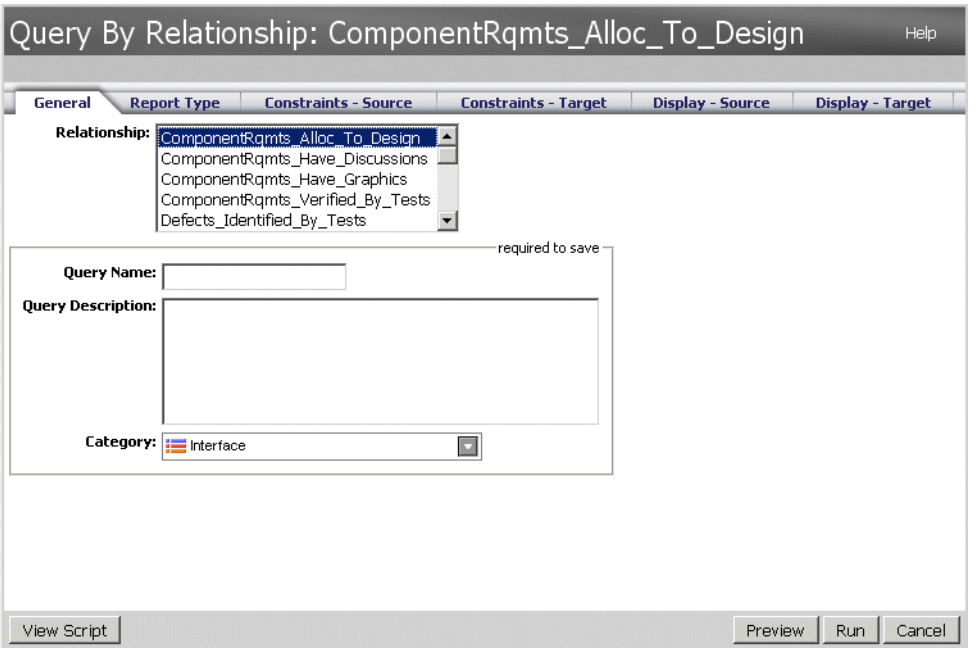
CAUTION! If you do not have the "read" permission in a category, the requirements in that category are not returned in the report results, even though they satisfy the report requirements.

To create a relationship query:

1 On the **Requirements** view, click the Categories tab.

2 Select the category for which you will create a class report.

3 Click the **Query** link at the top of the application window and select By Relationship. The **Query by Relationship** page opens to the **General** tab.



4 Select a relationship from the **Relationship** list.

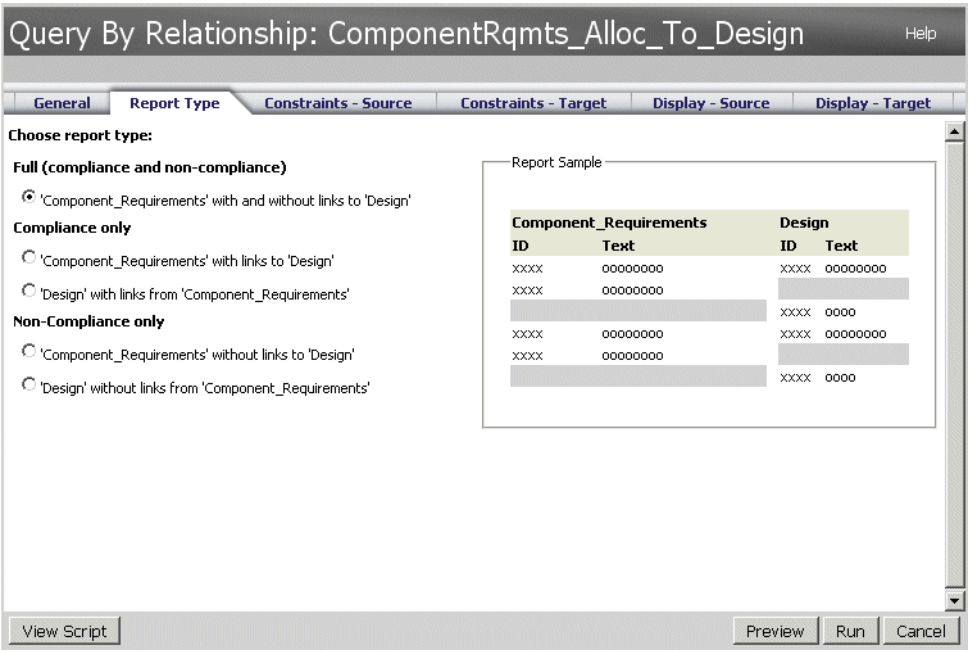
5 If you want to save the query:

a Type a name in the **Query Name** box.

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. If you complete the fields described in this step, the **Run** button changes to **Run and Save**.

6 Click the **Report Type** tab.



7 Select a report type. The report types are described in the following table.

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

NOTE A sample of the selected report type is displayed on the right side of the dialog box. This allows you to quickly compare the report formats.

8 To specify constraints, complete the **Constraints–Source**, **Constraints–Target** tab, or both. See "Attribute Constraints Tab" on page 90 for instructions.

9 To specify display options, complete the **Display–Source**, **Display–Target** tab, or both. See "Display Options Tab" on page 97 for instructions.

10 To run the query without closing the dialog box, click **Preview** on any tab.

11 To run the query, click **Run** (or **Run and Save**) on any tab. The query results are displayed in Requirements View. As long as you remain in Requirements View, you can click **Query Results** in the tree and view the results again.

12 To view the raw SQL-like code that underlies the query, click **View Script** on any tab. For more information, see "Editing a Report" on page 87.

Creating a Traceability Report

Creating a traceability report is the same as creating a new traceability report in Traceability View. The category that is selected in Requirements View is automatically used for the traceability report.

To create a traceability report:

1 On the Requirements view, click the **Categories** tab.

2 Select the category for which you will create a class report.

3 Click the **Query** link at the top of the application window and select **By Traceability**.

Editing a Report

You can edit a report in RM Browser in two ways:

- By changing the script parameters in the **Query by Class**, **Query by Relationship**, or **Edit Traceability Report** dialog boxes.
- By directly editing the raw SQL-like code that underlies the script from RM Browser. You do this in the **Query by Script** dialog box.
  - If a script cannot be edited in the **Query by Class** or **Query by Relationship** dialog boxes, the **Query by Script** dialog box opens automatically.
  - You can click the **View Script** button in the **Query by Class** or **Query Relationship** dialog box to open the **Query by Script** dialog box.

NOTES You cannot directly edit the SQL-like code for a traceability report.

To edit a report:

1 Display the Requirements view.

2 Display the **Reports** tab.

3 Click a report in the tree, run a quick search, run a report in the **Query by Class**, **Query by Relationship** dialog boxes, or run a traceability report. For more information, see "Running an Existing Class, Relationship, or Traceability Report" on page 82.

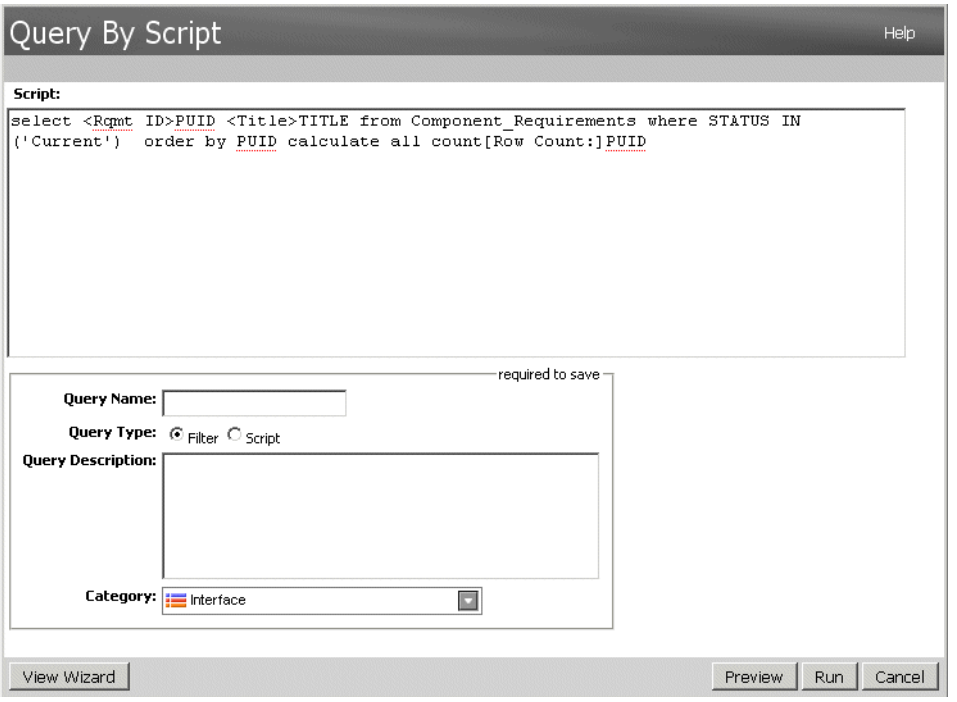
4 Click the pencil icon at the top of the query results.

5 If the query can be edited in the **Query by Class** or **Query by Relationship** dialog box, then the applicable dialog box opens. Edit the information according to "Creating a Class Report" on page 83 or "Creating a Relationship Report" on page 85.

NOTE The **Save and Run** button becomes the **Save As and Run** button when you change the original query name. This pertains to the **Query by Class**, **Query by Relationship**, and **Query by Script** dialog boxes.

6 If the query is a traceability query, the **Edit Traceability Report** dialog box opens.

7 If you want to view or edit the raw SQL-like code that underlies the **Query by Class** or **Query by Relationship** query, click **View Script** at the bottom of the dialog box. The **Query by Script** dialog box opens.



8 In the **Script** box, edit the script, if needed. For information about the scripting language, see "Script Syntax" on page 189.

9 If the **Query Name** field is empty and you want to save the script, type a name for the script.

10 In the **Query Type** field, select either **Filter** or **Script**. A filter is a query against a single class. A script is a query against one or more classes.

NOTE

- The **Query Description** field is not required to save the script. However, if you enter a description in the field, it appears as a tooltip when you hover over the script name in the Requirements View tree.
- You can create a query if you do not have Create permission for scripts, but you cannot save it.

11 If you want to change the category in which the query will be saved, select another category in the **Category** list.

12 To return to the query dialog box, click **View Wizard**.

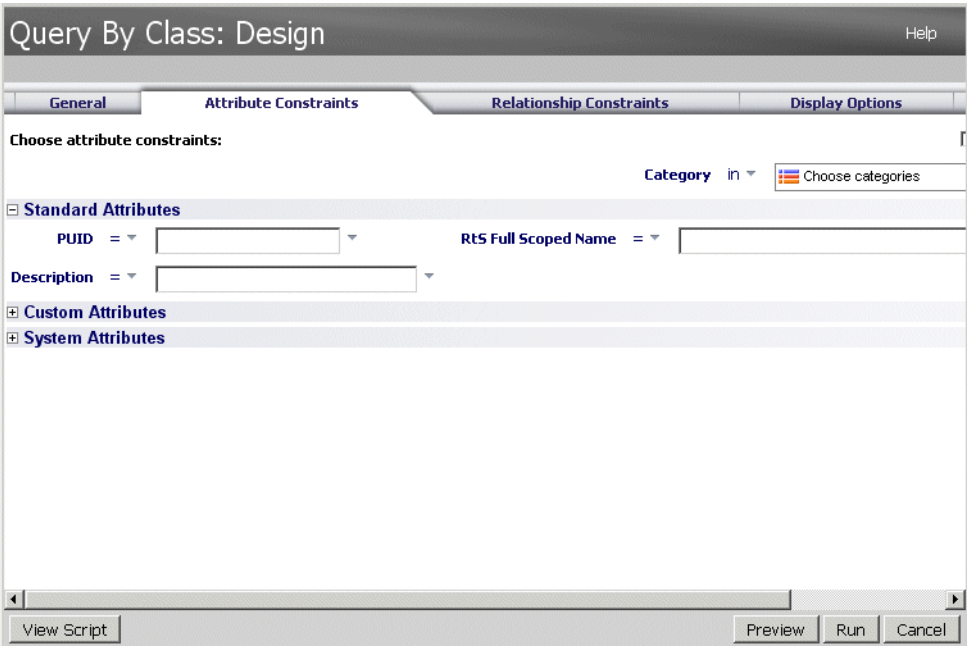
Query Dialog Boxes

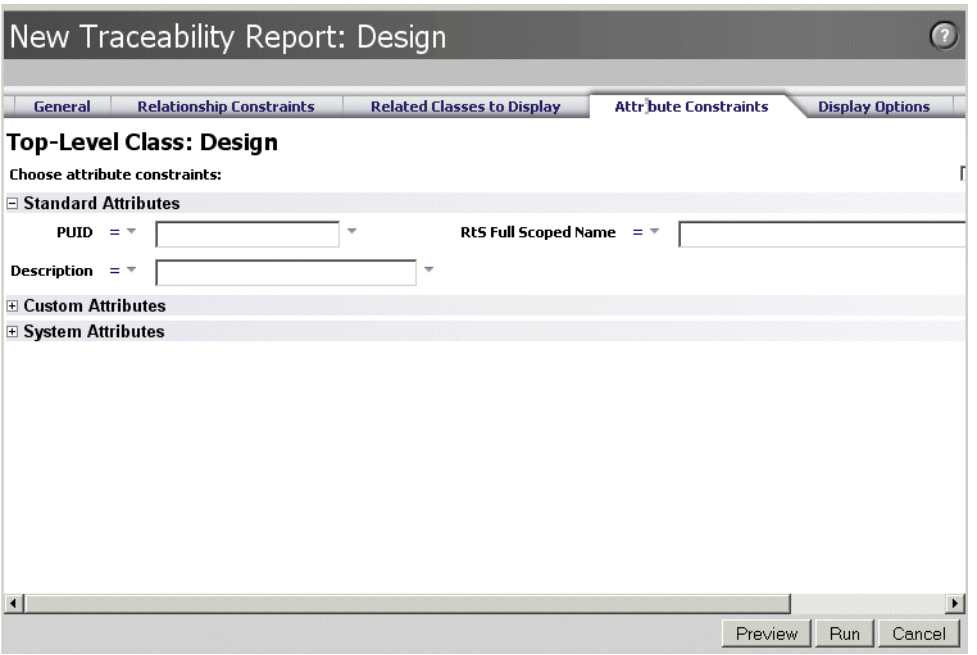
This section describes how to complete tabs that are common to several reporting dialog boxes in RM Browser.

Attribute Constraints Tab

To complete the Attribute Constraints tab:

1 Click the **Attribute Constraints** tab.





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

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.

5 Return to the appropriate procedure to run the query or search:

- "Creating a Class Report" on page 83
- "Creating a Relationship Report" on page 85

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.

Operator	Description
>	The attribute is greater than the value you specify.
<=	The attribute is less than or equal to the value you specify.
>=	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.

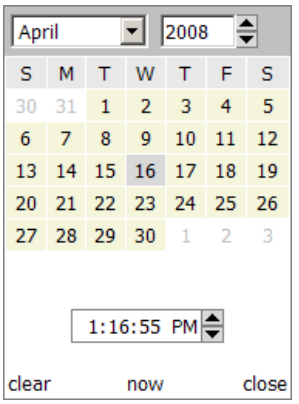
Choice	Description
Enter now	The attribute value is stored as part of the query.
Enter at runtime	The user is prompted to enter the attribute value when the query runs.

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.

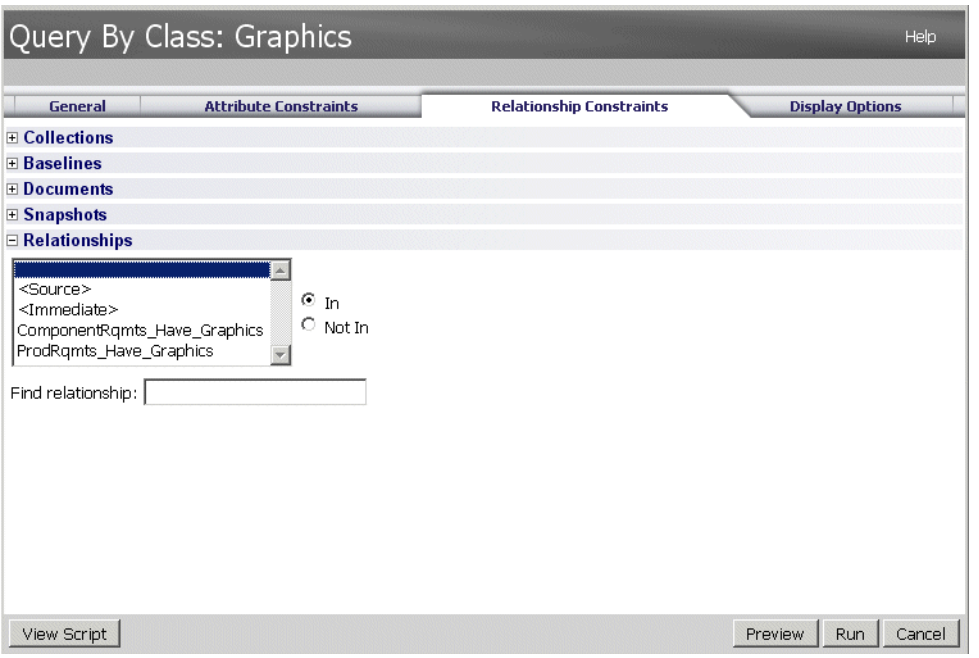
3 To clear the date attribute field, click the calendar icon, and click **clear**.

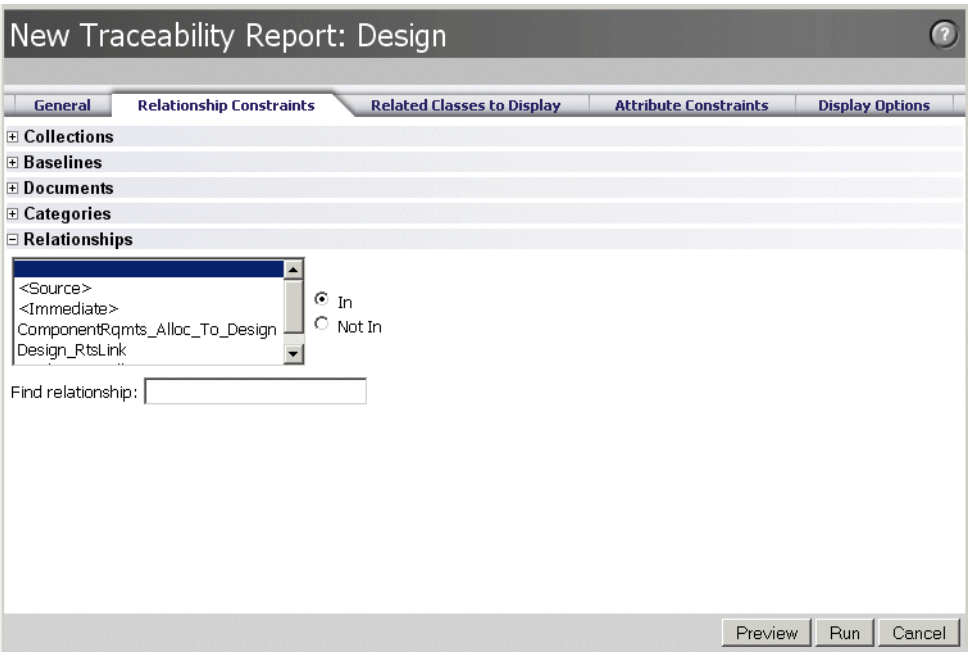
Relationship Constraints Tab

> **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.





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

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.

7 Return to the appropriate procedure to run the query or search:

- "Creating a Class Report" on page 83
- "Creating a Relationship Report" on page 85

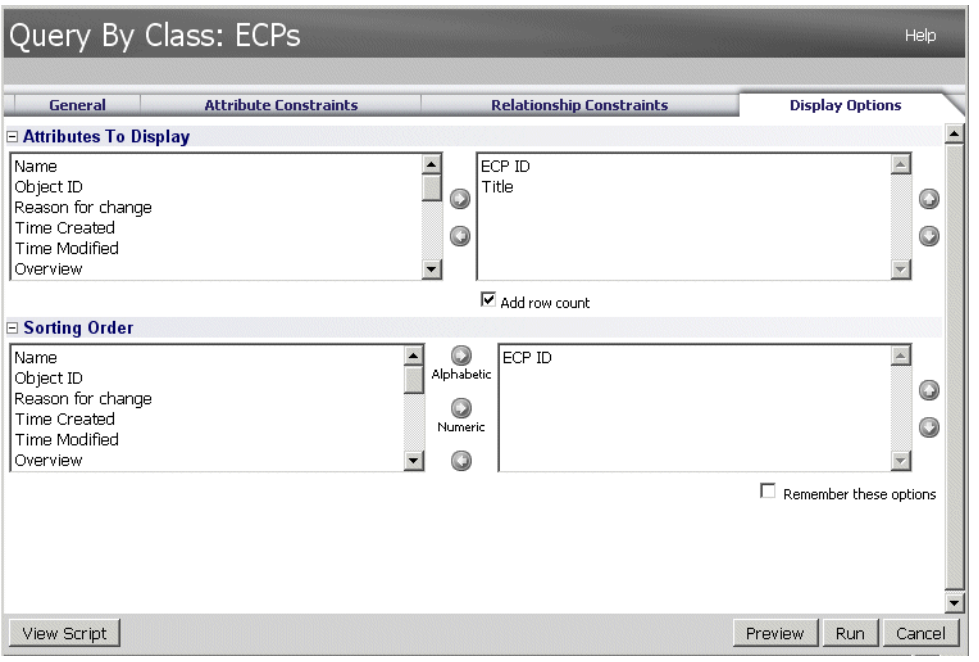
Display Options Tab

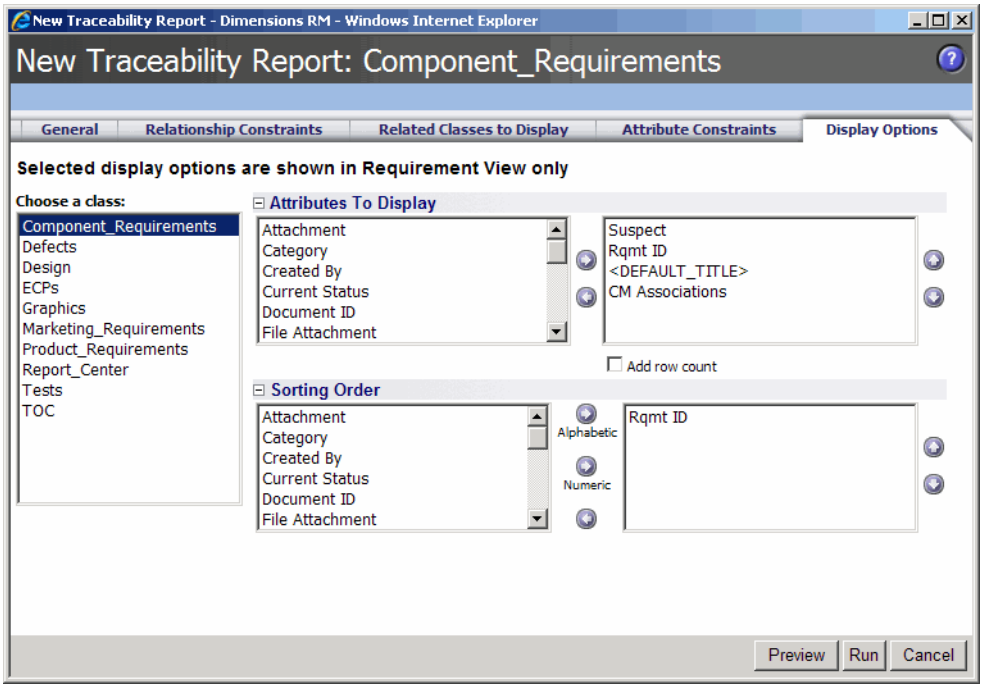
NOTE

- 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 Alphabetic for a simple alphabetic sort.
- Numeric button Numeric 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.

7 Return to the appropriate procedure to run the query or search:

- "Creating a Class Report" on page 83

- "Creating a Relationship Report" on page 85

Chapter 7

Managing Requirements

Creating a New Requirement	102
Editing a Requirement	106
Printing a Requirement	111
Attaching a File to a Requirement	111
Linking Requirements	113
Merging Requirement Changes	119
Administering Locks	122
Viewing Requirement History	123
Polling	126
Participating in Discussions	130
Submitting a Change Request	131
Reviewing a Change Request	132
Adding Requirements to an Existing Collection	133
Moving Requirements Between Categories	133
Deleting Requirements	134
Removing Requirements	134
Saving Query Results	135
Printing Query Results	138
Refreshing Data	138

Creating a New Requirement

This section describes ways to create a new requirement.

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, you can submit a change request for the new requirement as described in "Submitting a Change Request for a New Requirement" on page 106.

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

Adding New Requirements to Collections

When creating requirements, you can add the new requirements to one or more collections. To do this, expand the **Containers** section, and click the **Add to Collections** button. The Add to Containers dialog opens. Select one or more collections and click **OK**.

Home Page, Requirements View, and Documents View

The following procedure describes how to create a new requirement on your Home page, Requirements View, and Documents View. For information about creating a new requirement in Traceability View, see "Traceability View" on page 104.

To create a new requirement:

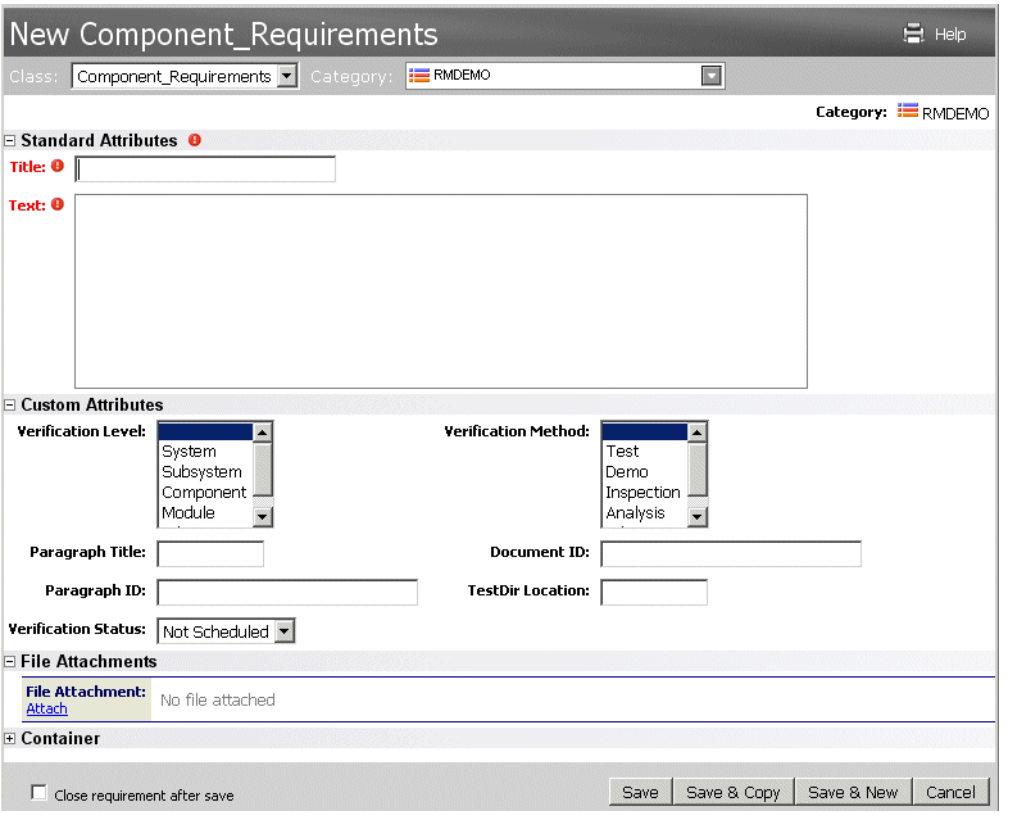
1. Click the **New** button on the Requirements view. The **New** (Choose a Class/*Category*) dialog box opens.

   a. The **Class** list includes all of the classes for which you have "create" or "submit" permission. Select the class to which you want to add the requirement.

   b. The **Category** list is populated with the last category that was selected in a **Category** list. You can select another category.

   If a requirement was selected or open when you clicked **Create** (or clicked **Create New and Link** from the **Links** section on the **Edit Attributes** dialog box), or if you

selected a class in the previous step, the **New** (class name) dialog box opens, with the **Class** list already populated.



NOTE

- You can select another class in the **Class** list or another category in the **Category** list and add a requirement to that class and category instead of the class and category you selected in Step 1. The exception to this is noted in the following note.
- If you opened the **New** dialog box by clicking the **Create New and Link** button in the **Links** section of the **Edit Attributes** dialog box, you cannot change the class selection, and a message is displayed in the button bar indicating that the new requirement will be automatically linked to the requirement displayed in the **Edit Attributes** dialog box.

2 Complete the fields in the attributes sections.

3 Use the **File Attachments** section to download, add, replace, or remove file attachments. For more information, see "Attaching a File to a Requirement" on page 111.

4 *Documents View only:* If a requirement is selected when you issue the **Create** command, the requirement is added to the parent chapter of the selected requirement, and an **Add as subrequirement** check box is included at the bottom of the dialog box. Select this check box if you want to create the new requirement as a subrequirement of the selected requirement.

If a requirement is not selected when you issue the **Create** command, the new requirement is added to the chapter that is selected.

5 Select the **Close requirement after save** check-box to close the requirement after saving it. Otherwise, you can continue editing the requirement after saving it.

6 Click **Save** to create the new requirement.

7 Click **Save & Copy** to create the new requirement and copy attributes into the next new requirement.

NOTE Attributes are copied into the next requirement if the administrator selected an option in the **Definition of attribute** dialog box in Class Definition. For more information, see the *Administrator's Guide*.

8 Click **Save & Next** to create the new requirement and clear attributes for another new requirement.

Traceability View

The following procedure describes how to create a new requirement in Traceability View. For information about creating a new requirement in the other views, see "Home Page, Requirements View, and Documents View" on page 102.

To create a new requirement and link it to the selected requirement:

1 In the navigation tree, select the requirement to which you want to link a new requirement.

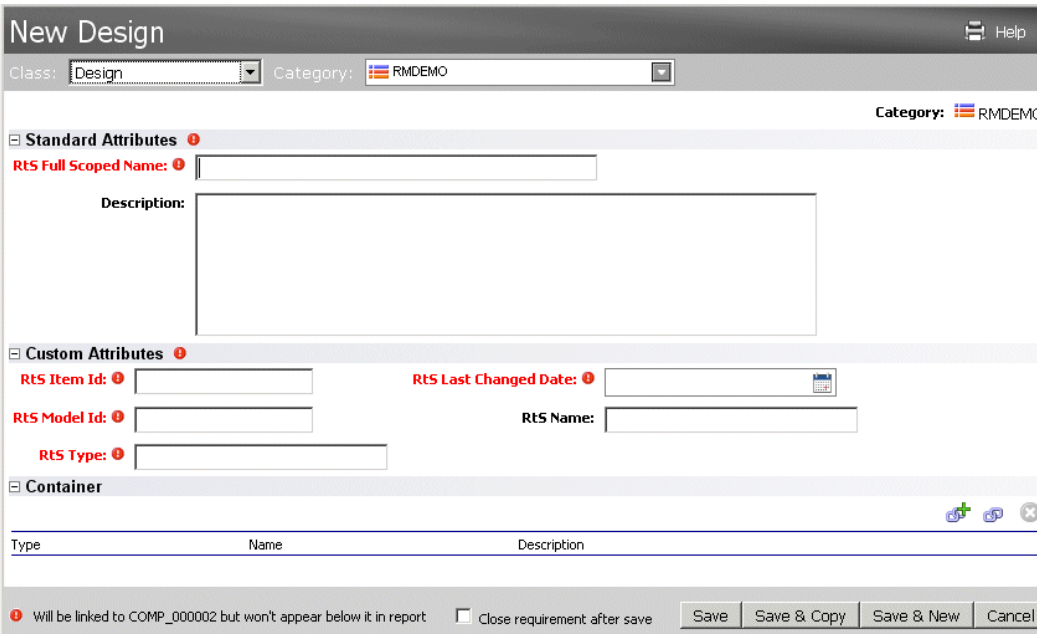
2 Click the **New & Link** button.

3 The **New** dialog box opens. The selected requirement (the requirement to which the new requirement will be linked) is displayed in the status bar.

4 In the **Class** list, select the class to which you want the new requirement to belong. This list contains all classes that can be related to the selected requirement. If there is more than one class of the same type in the list, the relationship name is appended to the class name.

5 In the **Category** list, select the category to which you want the new requirement to belong. This list contains all categories to which you have access. The **Category** list is pre-populated with the last category you selected in a **Category** list.

The **New Requirement** dialog box is populated after you select a class and a category.



6 Complete the fields in the attributes sections.

7 Use the **File Attachments** section to download, add, replace, or remove file attachments. For more information, see "Attaching a File to a Requirement" on page 111.

8 Click **Save** to create the new requirement. Note the following:

- If the relationship that is implied by the class you chose is displayed in the report, the new requirement is added to the navigation tree.
- If the relationship that is implied by the class you chose is not displayed in the report, a message in the status bar informs you that the requirement will be linked to the selected requirement, but will not be displayed in the report.
- For example, if you select a class that is not represented in the report, or if you select a class that is primary to the class of the selected requirement, the new requirement will not be displayed in the report.
- If the linked requirement does not satisfy the traceability report constraints, if any, it will not be displayed in the report.

9 Click **Save & Copy** to create the new requirement the new requirement and copy attributes into the next new requirement.

NOTE Attributes are copied into the next requirement if the administrator selected an option in the **Definition of attribute** dialog box in Class Definition. For more information, see the *Administrator's Guide*.

10 Click **Save & Next** to create the new requirement and clear attributes for another new requirement.

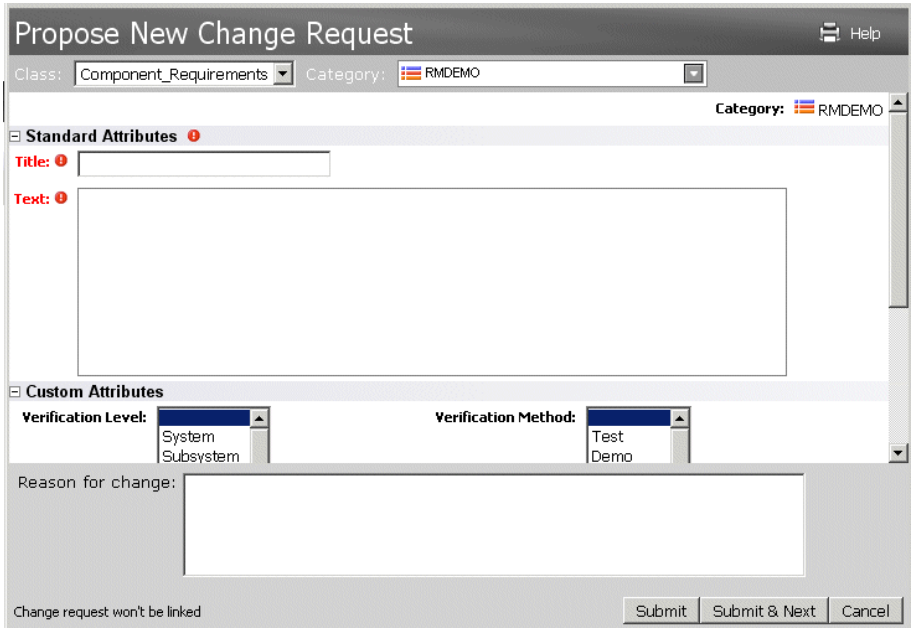
Submitting a Change Request for a New Requirement

If you do not have permission to create new requirements, but you do have permission to submit change requests, you can propose a change request for a new requirement. You can specify the desired attributes for the new requirement, fill in the additional fields, and submit a change request for the new requirement to be created.

To submit a change request for a new requirement:

1. In the Requirements view, click the **Propose New** button.

   The **Propose New Change Request** dialog box opens, with a change request section at the bottom.



2. Complete the fields in the attributes sections.

3. In the **Reason for change** field, type the justification for the new requirement. The HTML editing control is not available in the **Reason for change** field.

4. A high-level change management class type, called Engineering Change Proposal (ECP), can be used to collect multiple change requests into a single package. If you want to link the new requirement to an ECP class object, select the object in the **ECP** list. The **ECP** list box does not appear if no ECPs have been defined.

5. Click **Submit** to submit this change request or **Submit & Next** to submit this change request and then open another **Propose New Change Request** dialog box.

Editing a Requirement

"Editing Requirement Attributes" on page 107

"Copying a Requirement's URL to the Windows Clipboard" on page 110

"Editing the HTML-Enabled Text Attributes" on page 110

Editing Requirement Attributes

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

To edit requirement attributes:

1 Do one of the following:

- Select the requirement on your Home page.
- Select the requirement in the grid view of Requirements view.
- Display the Editable Grid View in the Requirements view and edit the attribute values directly.
- To edit one attribute across multiple requirements, select the requirements in the Editable Grid view in the Requirements view and edit the attribute for all selected requirements at once.
- Navigate to the requirement in the List view of Requirements view.
- Select the requirement in the detail pane of Documents view.
- Select the requirement in the traceability tree in Traceability view.

2 Do one of the following:

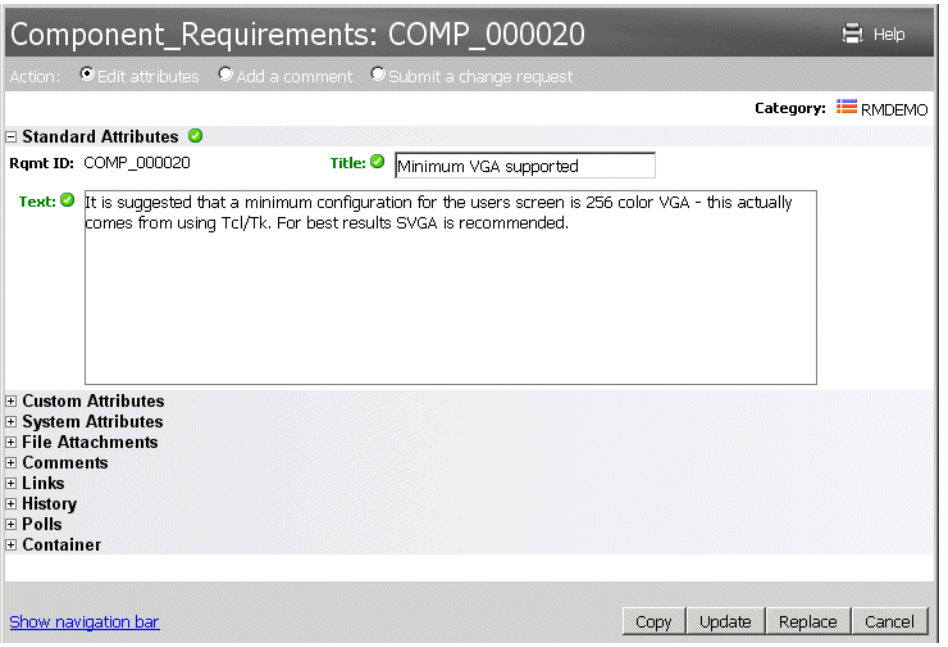
- If you are working in the Editable Grid View in the Requirements view, double-click on the attribute that you want to edit. If you want to edit the attribute for multiple requirements at one time, select all of the requirements to edit and then click the **Edit** button. You can then update the attribute based on the type of attribute. For example, if it is a text attribute, you can directly edit the text. When you have completed your edits to an attribute, an icon appears on the corner of the attributes that indicates that it has been updated:

  If you selected multiple requirements, the attribute is changed for all of the requirements that you selected.

  Once you have finished your changes, click the **Apply Changes** button .

- In any of the other views, double-click an attribute or click the **Edit** button. You can edit the requirement attributes directly in the main window.

- Double-click the requirement from the Traceability tree (in the Traceability view) or the document outline (in the Documents view).The **Edit Attributes** dialog box opens, with the **Edit attributes** action selected.



3 Do one of the following.

- Click **Copy** to create a new requirement with the same attribute values. Attributes are copied into the new requirement if the administrator selected an option in the **Definition of attribute** dialog box in Class Definition. For more information, see the *Administrator's Guide*.
- Click **Update** to update the requirement in place.
- Click **Replace** to create a new version of the requirement. Double-clicking a requirement in the **Pending Change Requests** and **Recent Comments** sections on your Home page opens the **Approve Changes** and **Add Comment** dialog boxes, respectively (not the **Edit Attributes** dialog box).

4 Change the attributes in the attributes sections as desired.

5 Do one of the following.

- Click **Copy** to create a new requirement with the same custom attributes.
- Click **Update & Next** to update the requirement in place and then edit the next requirement.
- Click **Replace & Next** to create a new version of the requirement and then edit the next requirement.
- Note the following:
  - The labels on the buttons vary depending on whether the navigation bar is shown or hidden. If it is shown, **Copy**, **Update & Next**, and **Replace & Next** appear on the buttons. If it is hidden, **Copy**, **Update**, and **Replace** appear on the buttons.
  - If you do not have "Update" or "Replace" permission, the fields on the dialog box are disabled. If you have permission to submit a change request, you can

click the **Submit a change request** action and request that the requirement be changed.

6 Use the **File Attachments** section to download, add, replace, or remove file attachments. For more information, see "Attaching a File to a Requirement" on page 111.

7 Use the **Comments** section to view comments associated with the requirement or participate in or start a discussion. For more information, see "Participating in Discussions" on page 130.

8 Use the **Links** section 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. For more information, see "Edit Requirement Links" on page 115 and "Suspect Links" on page 117.

9 Use the **Polls** section to create a poll associated with the requirement, modify an existing poll, vote in a poll, or view poll results. For more information, see "Polling" on page 126.

10 Use the **Dimensions CM** section to view Dimensions CM projects and requests that are associated with this requirement.

11 Use the **History** section to view information such as the date and time the requirement was modified, who modified it, and its status.

12 Use the **Container** section to add the requirement to, or remove the requirement from, a collection.

- To add it to a new collection, click the **Create New Container & Add** button. The Add to Containers - New Collection dialog opens. See "Adding a Collection" on page 145, but ignore the **Based on** section as that does not apply to this invocation of the dialog.
- To add it to an existing collection, click the **Add to Collections** button . The Add to Containers dialog opens. Select the desired collection or collections and click **OK**.
- To remove a requirement from a collection, select the collection from the list and click the **Remove from Containers** button.

13 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 link is not visible if there is 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, a traceability report name, **Quick Search**, and **Query Results**.

14 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. You cannot update a baselined requirement; the **Update** button is hidden for baselined requirements. A lock icon in the requirement banner indicates that the requirement is baselined.

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.

To copy a requirement's URL:

1. Open the requirement for editing. See "Editing Requirement Attributes" on page 107.
2. Expand the **System Attributes** section of the Edit Attributes dialog.
3. Right-click on the URL shown 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.

Editing the HTML-Enabled Text Attributes

When you click in or tab to a text attribute field, an HTML editor opens. The HTML editor provides many common features of word processors. A limited HTML editor toolbar displays in the Editable Grid view as well, in the Requirements view.

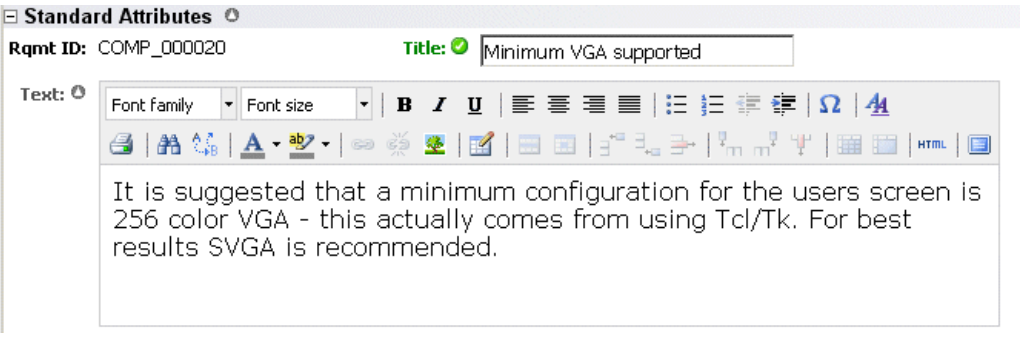
NOTE

- An administrator must enable the text attribute for HTML editing in Class Definition. For more information, see the *Serena Dimensions RM Administrator's Guide*.
- An administrator can make changes to the HTML editor settings. For more information, see the *Serena Dimensions RM Administrator's Guide*.

To open the HTML editor:

1. Click in or tab to the text attribute field.

   The HTML editor opens within the text attribute field.



2 Edit text as needed. A number of standard text editing controls display, allowing you to format text, insert images or other files, print, add and edit links, add tables, insert images, and other standard controls.

NOTE

- The HTML editor closes after you click **Update** or **Replace**.
- HTML-enabled text attributes cannot be edited in any of the other tools (for example, RM Concept), and are displayed as read-only text fields with the HTML tags removed.

Printing a Requirement

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

To print a requirement:

1 Do one of the following:
   - Select the requirement from your Home page.
   - Select the requirement in the Requirements View.
   - Select the requirement in the detail pane of Documents View.
   - Select the requirement in the traceability tree in Traceability View.

2 Double-click the requirement or click **Edit** under **Requirement** on the command bar. Alternatively, click the **Edit** button in the detail pane of Documents View or Traceability View.

   The **Edit Attributes** dialog box opens, with the **Edit attributes** action selected

3 Click the print button at the top right of the dialog box.

   A dialog box that contains the content of the requirement opens.

4 The print dialog box for your operating system opens. Click **Print**. To print the contents of requirement sections, you must expand the sections before printing the requirement.

Attaching a File to a Requirement

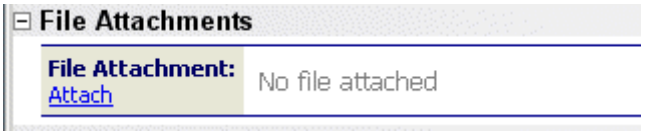
You can add file attachments as attributes to an requirement. Each file attachment attribute for the requirement is represented by a single line in the **File Attachments** section on the **Edit Attributes** dialog box. Each file attachment attribute holds only one file attachment.

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. Do one of the following:
   - Select the requirement on your Home page.
   - Select the requirement in the Requirements View.
   - Select the requirement in the navigation tree of Documents View.
   - Select the requirement in the traceability tree of Traceability View.
2. Double-click the requirement, or click **Edit** under **Requirement** on the command bar. Alternatively, click the **Edit** button in the detail pane of Documents View or Traceability View.
3. If it is collapsed, expand the **File Attachments** section on the **Edit Attributes** dialog box.



4. Do one of the following:
   - Click **Attach** to attach a file to the requirement. The **Add Attachment** dialog box opens. Type the full path to the file or click **Browse** to locate the file, and then click **OK**.
   - Click **Replace** 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**.
   - Click **Delete** to detach the file from the requirement.
   - Click the file name to download the file to your computer. A dialog box opens that prompts you to either save or open the file. Click **Save** and specify the file name, type, and location.

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

5. Do one of the following.
   - Click **Copy** to create a new requirement with the same custom attributes.

     NOTE Attributes are copied into the new requirement if the administrator selected an option in the **Definition of attribute** dialog box in Class Definition. For more information, see the *Administrator's Guide*.
   - Click **Update** to store the attribute values in the current version of the requirement.
   - Click **Replace** to create a new version of the requirement.

- Click **Update & Next** to store the attribute values in the current version of the requirement and then load the next requirement in the query results.
- Click **Replace & Next** to create a new version of the requirement and then load the next requirement in the query results.

NOTE

- The labels on the buttons vary depending on whether the navigation bar is shown or hidden. If it is shown, **Update & Next** and **Replace & Next** appear on the buttons. If it is hidden, **Update** and **Replace** appear on the buttons.
- If you do not have "Update" or "Replace" permission, the fields on the dialog box are disabled.

6 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 link is not visible if there is 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**.

7 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.

Linking Requirements

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.

How Links are Maintained

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.

Link Requirements Method

The following sections describe how to link requirements using the link requirements method.

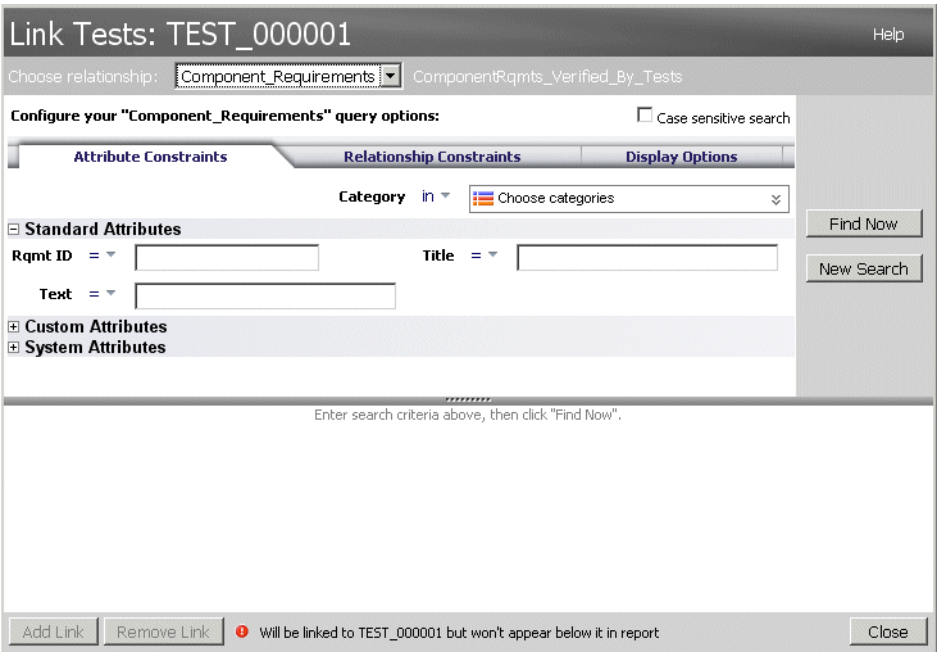
IMPORTANT! You can only link to objects that are baselined if the **Allow creating links for baselined objects** option is enabled for the project, on the Project Settings dialog box.

Home Page, Requirements View, and Documents View

The following procedure describes how to link to an existing requirement on your Home page, Requirements View, and Documents View.

To add or remove links:

1. Select the requirement from the **Home**, **Requirements**, or **Traceability** view.
2. Click the **Create Link** button**.** The **Link** dialog box opens.



3. Select a relationship in the **Choose relationship** list.

   This list includes all relationships in which the class of the selected requirement is primary or secondary.

4. If you want to specify constraints, do so on the **Attribute Constraints** tab, **Relationship Constraints** tab, or both.
5. If you want to specify display options, do so on the **Display Options** tab.
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 To run the search, click **Find Now** on any tab. The results are displayed at the bottom of the dialog box. Each requirement that is linked to the original requirement has a chain icon next to it.

Rqmt ID	Title
COMP_000001	Utilize Tcl/Tk
COMP_000002	Application settings will be saved
COMP_000003	Default window size 140x100
COMP_000004	Images can be expanded to full size
COMP_000005	Last 5 images

8 To link a requirement in the list to the original requirement, select the requirement in the list and click **Add Link**. To remove a link, select the requirement in the list and click **Remove Link**.

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

9 Click **New Search** if you want to clear the criteria and results and begin another search. Default values are restored on the **Attribute Constraints** and **Relationship Constraints** tabs.

Edit Requirement Links

To perform link operations:

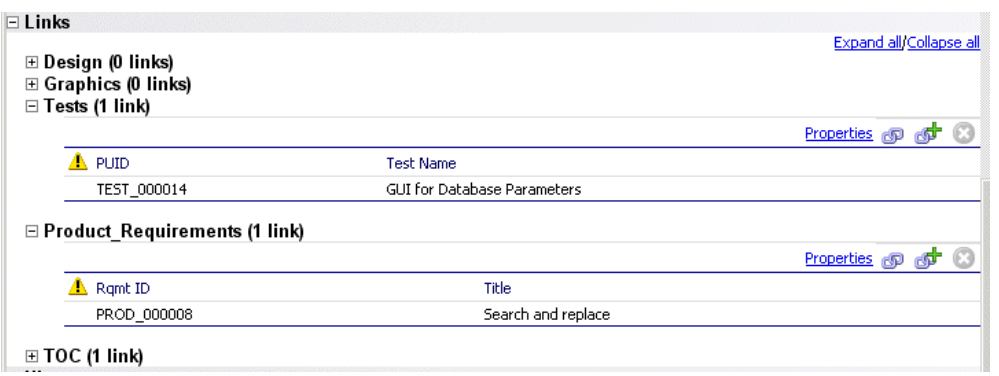
1 Select the requirement in the Home, Requirements, Documents, or Traceability view.

2 Click the **Edit** button. The **Edit Attributes** dialog box opens.

3 Expand the **Links** section.

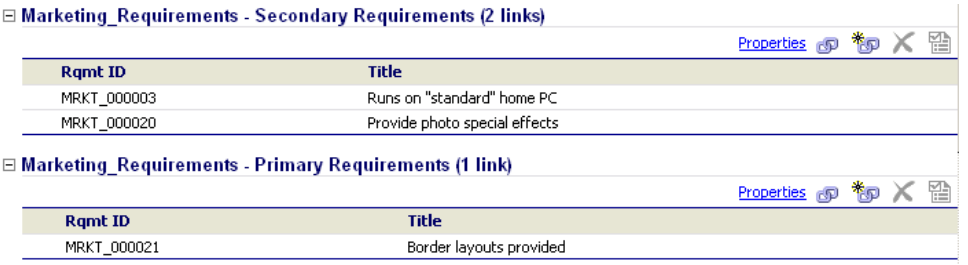
The relationships in which the selected requirement's class is primary or secondary are displayed.

4 Expand a relationship. A table containing the requirements in the relationship is displayed.



Cyclic relationships are relationships in which the relationship points from one class back to the same class. For cyclic relationships, two tables are displayed: one for the

case where the main requirement is primary and one for the case where the main requirement is secondary.

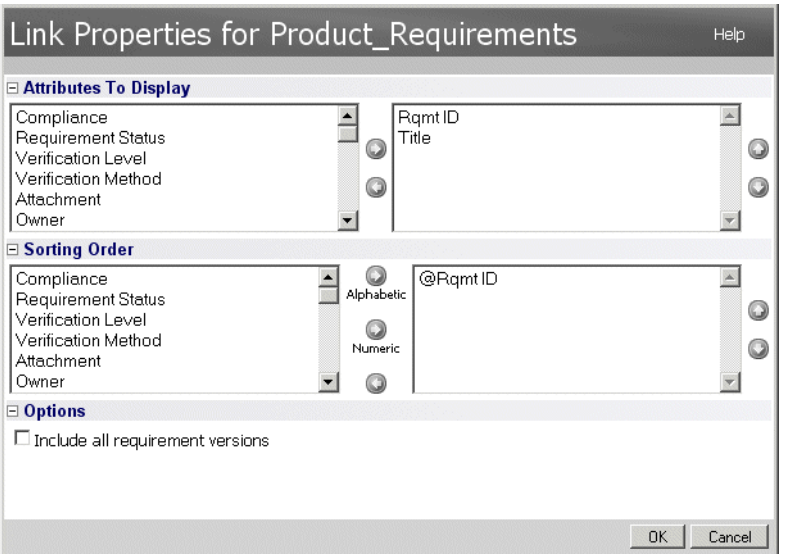


5 Do one of the following:

- To add another linked requirement, select a requirement and then click the **Create Link** button . Complete Step 4 through Step 9 under "Link Requirements Method" on page 114. In the List view of Requirements View, you do not need to select a requirement. This is because in List view, only one requirement is displayed at a time.
- To create a requirement and automatically link it, click the **New & Link** button. The **New** dialog box opens. Create the requirement as described in "Creating a New Requirement" on page 102. When you save the requirement, it is automatically linked.

6 To modify the attributes that are displayed in the **Links** section and specify whether all requirements or only "Current" requirements are displayed in the **Links** section:

a Click the **Properties** link. The **Link Properties** dialog box opens.



NOTE The settings you specify in the **Link Properties** dialog box are stored for the user and for the class.

b In the **Attributes To Display** list, select one or more attributes that you want to see in the **Links** section, and click the right arrow button. The attributes move to the list on the right.

c To remove one or more attributes from the **Links** section, select the attribute or attributes from the list on the right and then click the left arrow button. The attributes move to the list on the left.

7 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 an ASCII (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. 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** 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.

8 In the **Options** section, select the **Include all requirement versions** check box if you want to display links to all linked requirements, not only those that have "Current" status. By default, this check box is cleared, and only "Current" requirements are displayed.

NOTE

- If the *Current Status* and *Object ID* attributes are not in the list of attributes to be displayed, you are prompted whether you want to add them to the list of displayed attributes.
- The **Properties** link is always present in the **Links** section, even if there are no links displayed for a relationship. This lets you use the **Link Properties** dialog box to specify that links for all requirement versions, if any, be displayed.
- You cannot remove links to objects that are baselined.

Suspect Links

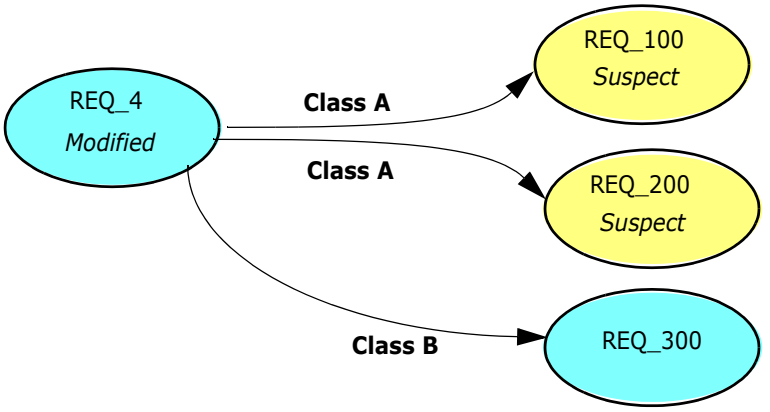
After relationships exist between requirements, it is possible for changes in one requirement to affect other requirements. If you are working in a team, you need to know whether a change to a related requirement has possibly rendered other requirements questionable, or "suspect."

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 Select the requirement.

2 Click **Edit**. The **Edit Attributes** dialog box opens. 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 if 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, navigation tree of Documents View, and traceability tree of Traceability View.

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 edit a requirement or chapter at the same time. This section describes requirement merging. For information about the locking mechanism, see "Administering Locks" on page 122. The configuration is set in the **Project Settings** dialog box.

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.

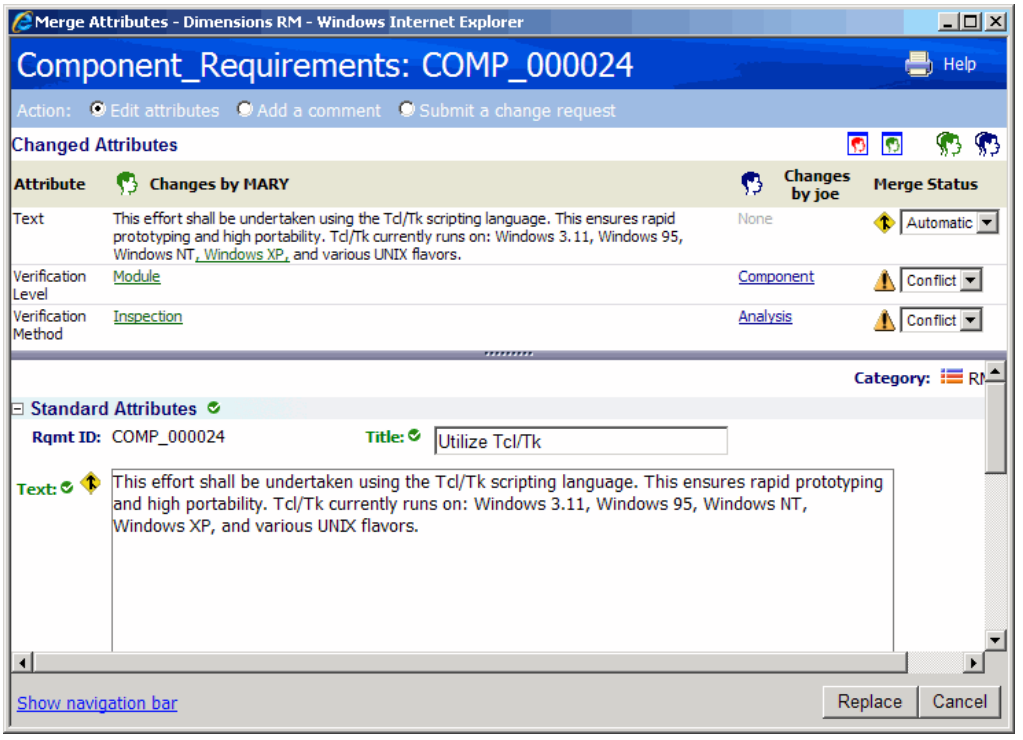
5 The second user clicks **OK** on the notification message. The **Edit Attributes** dialog box becomes the **Merge Attributes** dialog box. The **Merge Attributes** dialog box differs from the **Edit Attributes** dialog box in that the **Merge Attributes** dialog box:

- 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 121 and "Merging Changes" on page 122.

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**.

Administering Locks

NOTE RM Browser can be configured to use locking or merging to handle the situation when multiple users edit a requirement or chapter at the same time. This section describes the locking mechanism. For information about merging, see "Merging Requirement Changes" on page 119. 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*.

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:

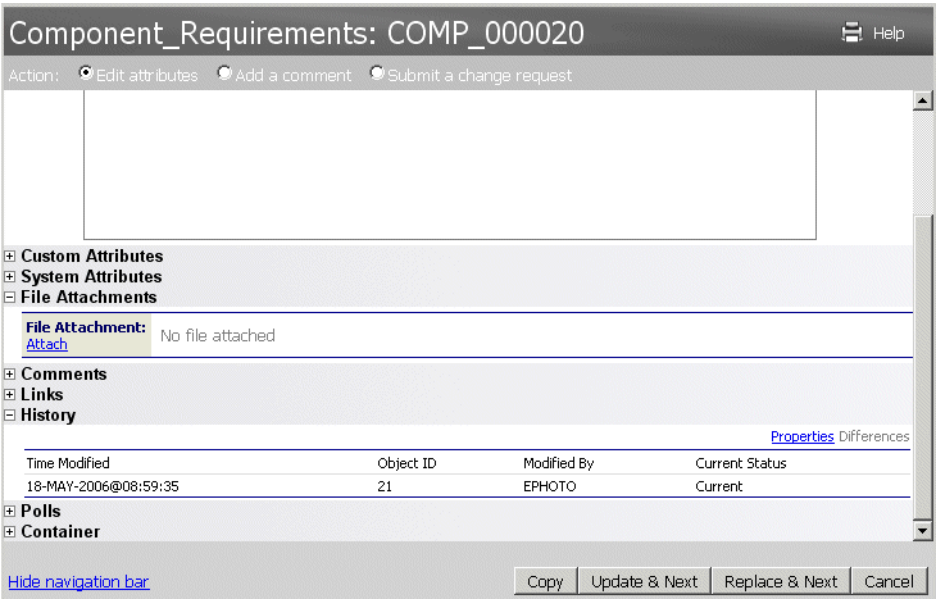
- You close the dialog box.
- You save changes.
- You use the **Administer Locks** dialog box to remove locks. Users can unlock the requirements or chapters they locked; users with *Unlock* permission can unlock requirements or chapters that others locked.
- An administrator uses RM Manage to grant the 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. In the Home, Requirements, or Traceability view, select the requirement and click **Edit**. The **Edit Attributes** dialog box opens.
2. Expand the **History** section.



Changing the Attributes in the History Section

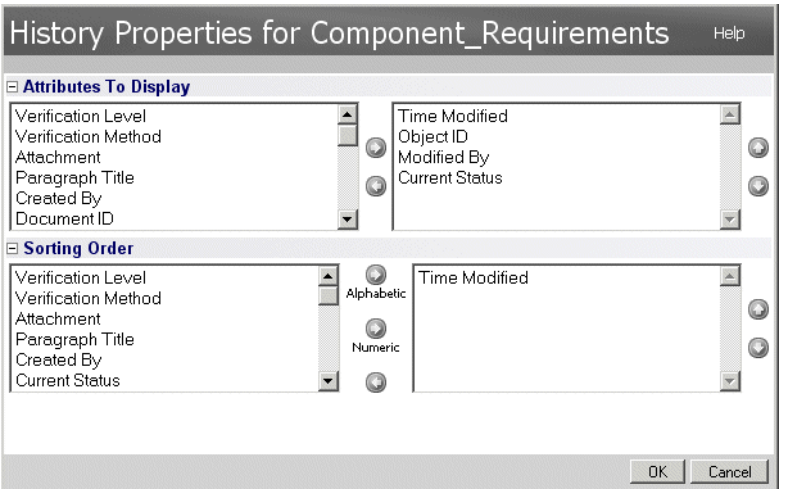
You can change the attributes that you see in the **History** section, and specify the order of the attributes.

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 Alphabetic for a simple alphabetic sort.
     - Numeric button Numeric 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.

History

Properties Differences

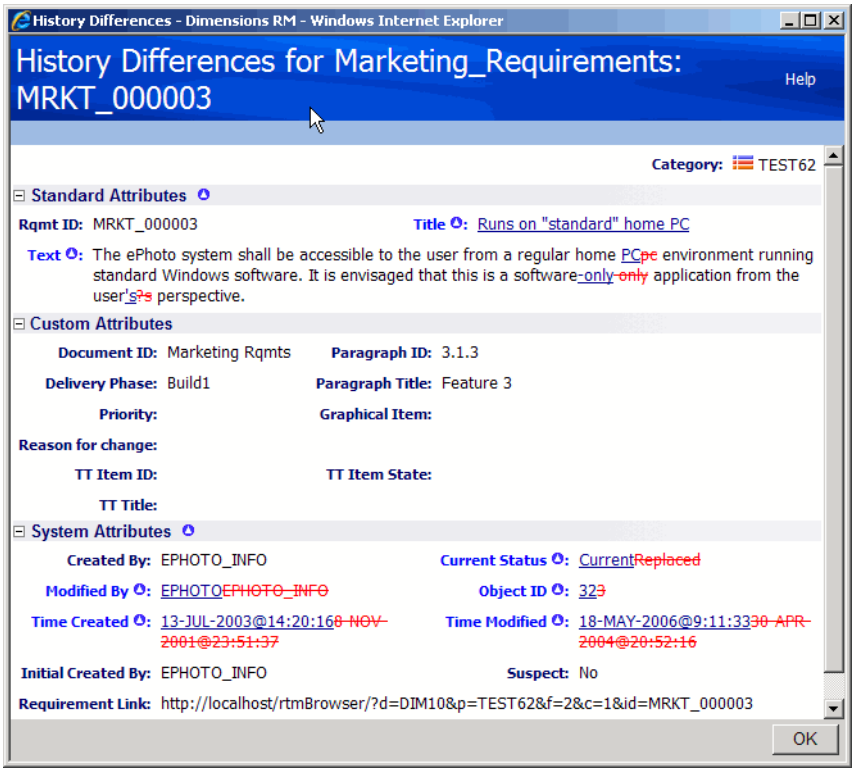
Time Modified	Object ID	Modified By	Current Status
30-APR-2004@20:52:16	3	EPHOTO_INFO	Replaced
18-MAY-2006@09:11:33	32	EPHOTO	Current
25-MAY-2006@14:13:52	11	EPHOTO	Proposed

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.

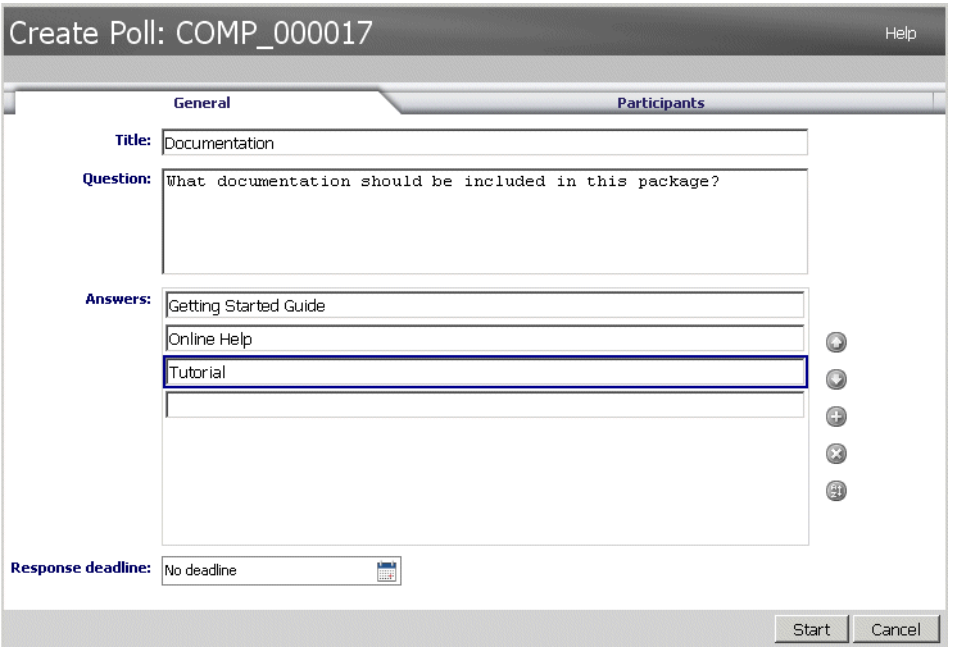
Creating a Poll

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. Select the requirement in the Home, Requirements, or Documents view.
2. Click the **Create Poll** button. You may need to first click the **More** button to display the **Create Poll** button. The **Create Poll** dialog box opens to the **General** tab.
3. Type the title of the poll. The poll title does not have to be unique; other polls can have the same title.
4. Type the question for which you need feedback.
5. 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.



6. 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.

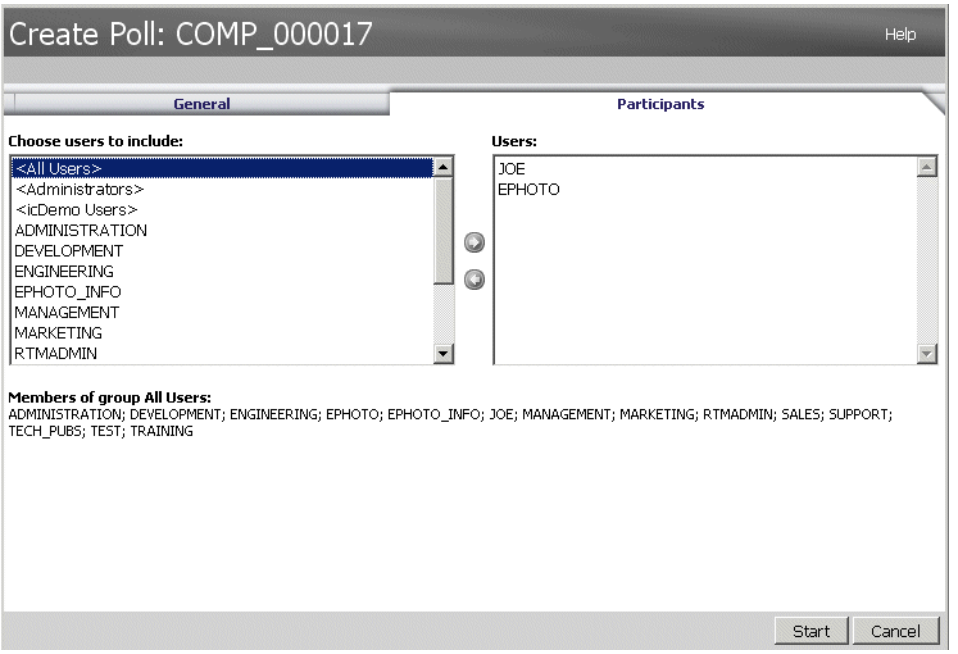
7 In the **Response deadline** section, either select **No deadline** or select the date and time that the poll should close.

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.

8 Click the **Participants** tab.

9 Select the users you want to participate in the poll. A minimum of three participants is required.

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



10 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 Home Page

You can view polls from a pre-built section on your Home 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 Select a requirement in the Home, Requirements, or Documents view.

2 Click **Add Comment** button. The Add a Comment dialog box 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 for a new requirement, you must have "Create CR" permission for classes.

To submit a change request for a requirement:

1. Select a requirement in the Home, Requirements, or Documents view.
2. Click the **Propose Change** button. The Submit a Change Request dialog box opens.
3. Change the attributes in the attributes sections as desired. Changes are marked by a triangle icon .
4. 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.
5. 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.

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 106.

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 Home 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 Select a requirement in the Home, Requirements, or Documents view.

2 Click the **Approve/Reject** button.

The **Approve Changes** dialog box opens. A list of all pending change requests against the requirement is displayed in the left pane.

3 Select a change request to view its details.

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

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

5 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.

6 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.

7 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 143.

To add requirements to an existing collection:

1 From the Requirements view, select the desired requirements.

2 Click the **Add to Collection(s)** button . The Add to Containers dialog opens.

3 Select the desired collection or collections.

4 Click **OK**.

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 Click the **Organize by Category** button from the Home or Requirements view. The Organize by Category dialog opens.

2 Select a class in which to search for requirements from the **Look for class** list. If an object was selected when you invoked the dialog, this field will be pre-populated; change it as needed.

3 Specify search constraints, as needed. For detailed information on the restraints tabs, see "Attribute Constraints Tab" on page 90 and "Relationship Constraints Tab" on page 93.

4 Specify different display options for the search results, as needed. For detailed information on specifying display options, see "Display Options Tab" on page 97.

5 Click **Find Now** to run the specified search. The results are displayed in the bottom half of the dialog.

TIP To clear the existing search results and constraints and return to the defaults, click the **New Search** button.

6 Select the requirements from the search results that you want to move to a different category.

7 From the **Category** list at the bottom of the dialog, select the category to which you want to move the selected requirements.

8 Click the **Move** button.

Deleting Requirements

When you delete a requirement, it is marked as deleted. 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 Select a requirement in the Home, Requirements, or Documents view.

2 Click the **Delete** button.

Removing Requirements

When you remove a requirement, it is physically 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.

To remove a requirement:

1 Select a requirement in the Home, Requirements, or Documents view.

2 Click the **Remove** button.

Saving Query Results

From the Grid view or List view of Requirements View, you can save query results to a file with any of the following formats:

- Excel Spreadsheet (*.xls) Note that if you are using Microsoft® Excel 2007, you may receive a message informing you that the file you are trying to open is in a different format than .xls. You can safely click **Yes** in this message box and the file will open in Excel.
- Word Document (*.doc)
- XML Document (*.xml)
- Web Page (*.html)
- CSV (Comma delimited) (*.csv)
- Plain Text (*.txt)
- Plain Text (Table) (*.txt)

To save query results:

1 If the query is not already displayed in the content pane, select it in the tree.

2 Click the save button , and then select the format to which you want to save the file.

3 If you selected XML Document, Web Page, Plain Text, or Plain Text (Table), the results are displayed in a Web browser window. Select **File** > **Save As** and specify the file name, type, and location.

4 If you selected any other format, a dialog box opens that prompts you to either save or open the file. Click **Save** and specify the file name, type, and location.

Configuring Internet Explorer (IE) to Save Query Results

The tab (IE 7) or download dialog box (IE 6) that is used to save query results may not be presented when you try to save query results.

To prevent this problem:

1 in Internet Explorer, select **Tools > Internet Options**.

2 In the **Internet Options** dialog box, click the **Security** tab.

3 On the **Security** tab, click **Custom Level**. The **Security Settings** dialog box opens.

4 Under **Downloads**, enable the following options:

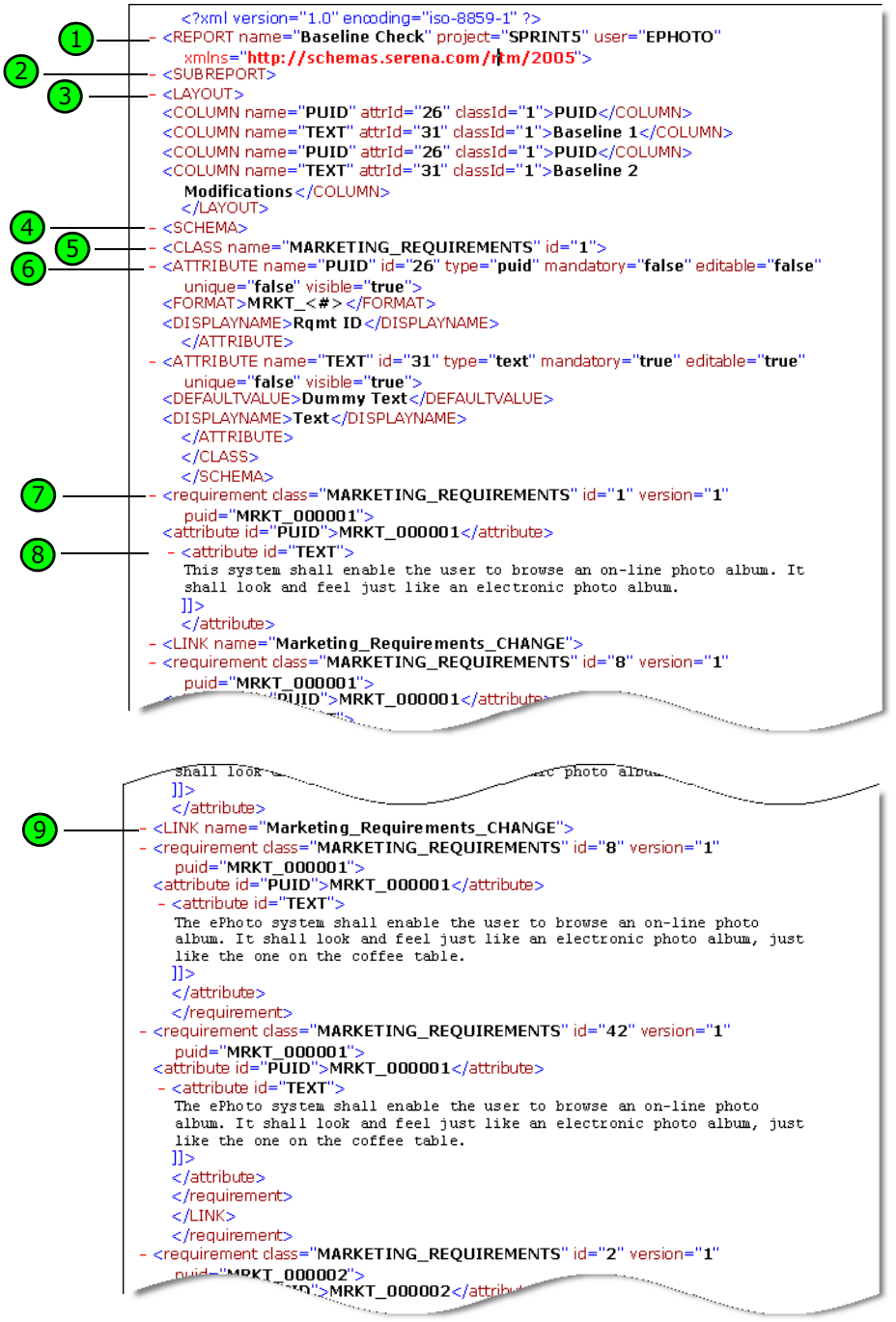
- **Automatic prompting for file downloads**
- **File download**

- **Font download**

5 Under **Miscellaneous**, disable the use **Pop-up Blocker** option.

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.


1
2
3
4
5
6
7
8
9
<?xml version="1.0" encoding="iso-8859-1" ?>
- <REPORT name="Baseline Check" project="SPRINT5" user="EPHOTO"
xmlns="http://schemas.serena.com/rm/2005">
- <SUBREPORT>
- <LAYOUT>
<COLUMN name="PUID" attrId="26" classId="1">PUID</COLUMN>
<COLUMN name="TEXT" attrId="31" classId="1">Baseline 1</COLUMN>
<COLUMN name="PUID" attrId="26" classId="1">PUID</COLUMN>
<COLUMN name="TEXT" attrId="31" classId="1">Baseline 2
Modifications</COLUMN>
</LAYOUT>
- <SCHEMA>
- <CLASS name="MARKETING_REQUIREMENTS" id="1">
- <ATTRIBUTE name="PUID" id="26" type="puid" mandatory="false" editable="false"
unique="false" visible="true">
<FORMAT>MRKT_<#></FORMAT>
<DISPLAYNAME>Rqmt ID</DISPLAYNAME>
</ATTRIBUTE>
- <ATTRIBUTE name="TEXT" id="31" type="text" mandatory="true" editable="true"
unique="false" visible="true">
<DEFAULTVALUE>Dummy Text</DEFAULTVALUE>
<DISPLAYNAME>Text</DISPLAYNAME>
</ATTRIBUTE>
</CLASS>
</SCHEMA>
- <requirement class="MARKETING_REQUIREMENTS" id="1" version="1"
puid="MRKT_000001">
<attribute id="PUID">MRKT_000001</attribute>
- <attribute id="TEXT">
This system shall enable the user to browse an on-line photo album. It
shall look and feel just like an electronic photo album.
]]>
</attribute>
- <LINK name="Marketing_Requirements_CHANGE">
- <requirement class="MARKETING_REQUIREMENTS" id="8" version="1"
puid="MRKT_000001">
]]>
</attribute>
- <LINK name="Marketing_Requirements_CHANGE">
- <requirement class="MARKETING_REQUIREMENTS" id="8" version="1"
puid="MRKT_000001">
<attribute id="PUID">MRKT_000001</attribute>
- <attribute id="TEXT">
The ePhoto system shall enable the user to browse an on-line photo
album. It shall look and feel just like an electronic photo album, just
like the one on the coffee table.
]]>
</attribute>
</requirement>
- <requirement class="MARKETING_REQUIREMENTS" id="42" version="1"
puid="MRKT_000001">
<attribute id="PUID">MRKT_000001</antribute>
- <attribute id="TEXT">
The ePhoto system shall enable the user to browse an on-line photo
album. It shall look and feel just like an electronic photo album, just
like the one on the coffee table.
]]>
</attribute>
</requirement>
</LINK>
</requirement>
- <requirement class="MARKETING_REQUIREMENTS" id="2" version="1"
puid="MRKT_000002">
MRKT_000002</</antribute></antribute></antribute>

```
10  - </attribute>
    - </requirement>
    - </SUBREPORT>
    - <SCRIPT>
      - <![CDATA[
      select  <PUID>PUID <Baseline 1>TEXT from Marketing_Requirements where
      group in ('Baseline 1') and STATUS != 'Deleted'


      xref source secondary_history


      select  <PUID>PUID <Baseline 2 Modifications>TEXT from
      Marketing_Requirements where group in ('Baseline 2')


      plus

      select  <PUID>PUID <Baseline 2 Additions>TEXT from
      Marketing_Requirements where group in ('Baseline 2')  and group not
      in  ('Baseline 1')  and NOT_SECONDARY_IN immediate


      plus

      select  <PUID>PUID <Baseline 1 Deletions>TEXT from
      Marketing_Requirements where group in ('Baseline 1') and
      STATUS='Deleted'
    ]]>
    - </SCRIPT>
    - </REPORT>
```

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.

Key	Description
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 Query Results

You can print the results of a query from the Grid view or List view of Requirements View. If you are printing from the List view, only the displayed requirement is printed. Expanded sections on the form are printed, but collapsed sections are not printed.

To print query results:

1. If the query is not already displayed in the content pane, select it in the tree.
2. Click the **Print** button , and select a printing option. You might have to scroll to the right to see the button.
   - **Print As Shown** prints the report as displayed. With some Web browsers, you might experience a problem printing the entire width of the report. If you experience this problem, select the **Print to Fit** option.
   - **Print to Fit** produces an alternate format that nests related requirements. This option produces better print results in some situations (for example, the situation described under **Fit As Shown**). Click **Return to previous results** to return to the **Print As Shown** format.

Refreshing Data

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.

For example:

- If you are viewing query results and press the F5 key in Requirements View, the content pane is cleared and all nodes in the tree except the **My Favorites** node are collapsed.
- If you are viewing query results and press the F5 key while on your Home page, all sections on the page are collapsed.
- If you are viewing query results and press the F5 key in Documents View, the document node is selected and the detail pane changes accordingly.
- If you are viewing query results and press the F5 key in Traceability View, the top-level class is selected and the detail pane changes accordingly.

To refresh query results in Requirements View:

Do one of the following:

- Rerun the query by clicking it in the tree.
- Click the **Refresh** button in the content pane.

To refresh query results on your Home page:

- Click the **Refresh** button on the expanded section. Note that collapsing and then expanding a section on your Home page does not refresh the query results.

To refresh the navigation tree in Documents View:

The Documents View navigation tree is dynamically updated when you add or delete new chapters or requirements or move chapters or requirements. When you add a chapter or requirement, it is displayed in bold for a few seconds.

To refresh the detail pane in Documents View:

- Click the **Refresh** button.

To refresh the traceability tree in Traceability View:

- Click the refresh button at the top right of the tree.

To refresh the detail pane in Traceability View:

- Select the root node in the traceability tree and then click the **Refresh** button in the detail pane.

NOTE The Traceability View traceability tree is dynamically updated when you add requirements to it or remove requirements from it. When you add a requirement, it is displayed in bold for a few seconds.

Chapter 8

Managing Containers and Collections

About Containers	142
Managing Containers	142
Managing Collections	143
Baselining a Collection	148
Moving Containers to a Different Category	150

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. Please see Chapter 4, "Managing Documents" on page 35.
- **Snapshot**: A baseline of a document. Please see "Creating a Snapshot of a Document" on page 46.

Managing Containers

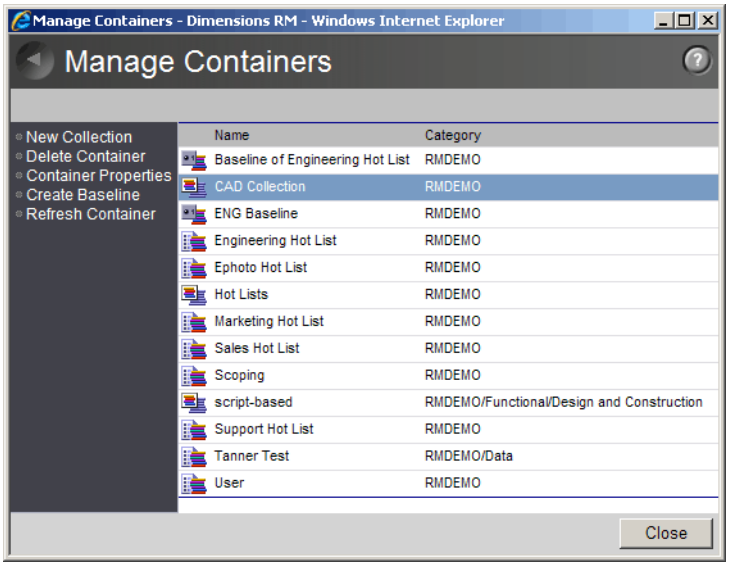
Using the **Manage Containers** dialog box, you can perform the following tasks:

- Create collections (see "Adding a Collection" on page 145)
- Delete collections (see "Deleting a Collection" on page 147)
- Updating collection properties (see "Updating Collection Properties" on page 147)
- Baseline collections (see "Baselining a Collection" on page 148)

Using the **Move Containers to category** dialog box, you can change what category a container belongs to (see "Moving Containers to a Different Category" on page 150).

To access the main Manage Containers dialog box:

- Click **Manage Containers** from the **Home** or **Requirements** view.



You can identify each container's type by its icon, as shown in the following table.

Icon	Description
	Parent Collection
	Child Collection
	Baseline

Managing 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.

Managing Requirements in a Collection

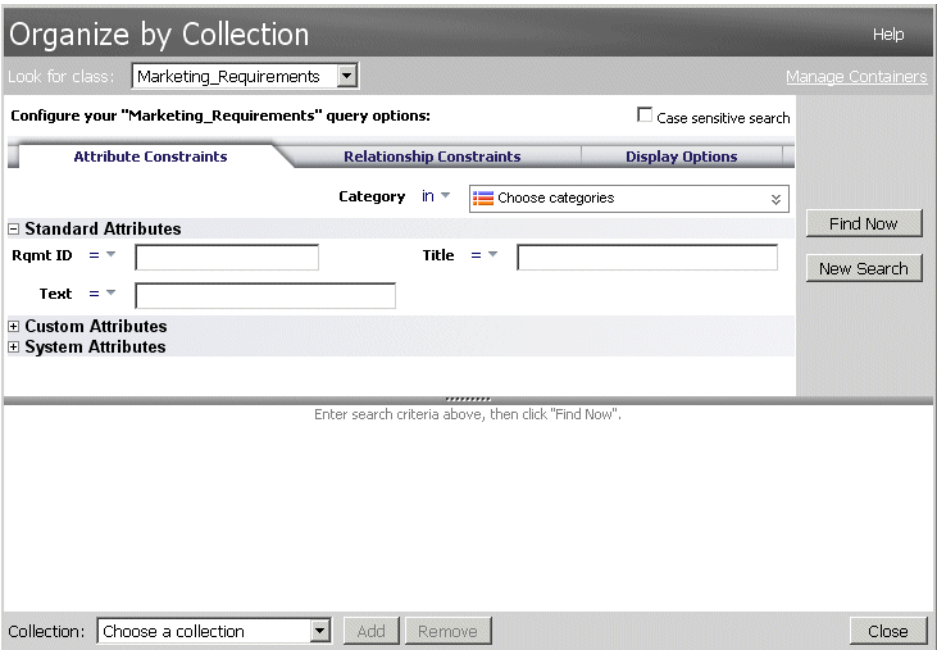
You search for requirements from the **Organize by Collection** dialog box and then select the ones you want to add to or remove from a collection. You can specify search criteria on any or all of the three tabs on the **Organize by Collection** dialog box if you want to

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 and click a button to add them to a collection. See "Adding Requirements to an Existing Collection" on page 133.

To add requirements to or remove requirements from a collection:

1 On the Requirements view, click the **Organize** button. The **Organize by Collection** dialog box opens.



2 In the **Look for Class** list, select the class in which you want to search for requirements.

3 If you want to specify constraints, do so on the **Attribute Constraints** tab, **Relationship Constraints** tab, or both.

4 If you want to specify the display order, specify display options on the **Display Options** tab.

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

6 If you want to change the search criteria, click **New Search** on any tab. Default values are stored on the **Attribute Constraints** and **Relationship Constraints** tabs.

7 To run the search, click **Find Now** on any tab. The results are displayed at the bottom of the dialog box.

8 In the **Collection** list at the bottom of the dialog box, select the collection to which you want to add requirements.

9 Select one or more requirements to move to the Collection and click **Add**, or select one or more requirements to remove from the collection, and click **Remove**.

To select multiple requirements, press the Control key while you select the requirements. To select a range of requirements, select the first requirement, and then select the last requirement while pressing the Shift key.

TIP Alternatively, you can double-click a requirement to toggle between it being added to or removed from the collection.

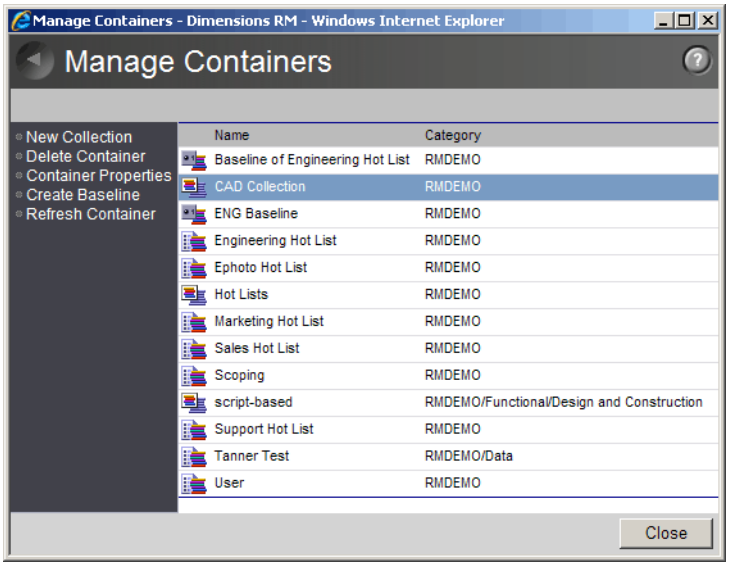
Adding a Collection

When you add a new collection in RM Browser, a child collection is created.

To add a collection:

1 Open the **Manage Containers -> New** dialog box using one of the following methods:

- Click **Manage Containers** on the **Home** view. The **Manage Containers** dialog box opens.



  Click **New Collection**. The **Manage Containers -> New** dialog box opens.

- Click **Organize** on the **Requirements** views. Then, on the Organize by Collection dialog box, click the **Manage Containers** link to display the Manage Containers dialog box. Click **New Collection**.

2 In the **Collection Name** box, type the name of the new collection. Note the following:

- Do not use Oracle reserved words in collection names.
- A collection name can contain a maximum of 256 characters.

3 *Optional* In the **Description** box, type a description of the collection. The maximum length of the description is 512 characters.

4 Select an owning category from the **Category** list.

> **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 **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 requirments 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 Select one of the following **Based on** options to determine how the collection is initially populated:

- **Empty Collection:** If you do not want to base the new collection on an existing container, select **Empty Collection**.
- **Selected Container(s):** If you want to base the new collection on one of more existing containers, select **Selected Container(s)**, and 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:** If you want to place the results of a query in the new collection, select **Query**, and then select the desired report.

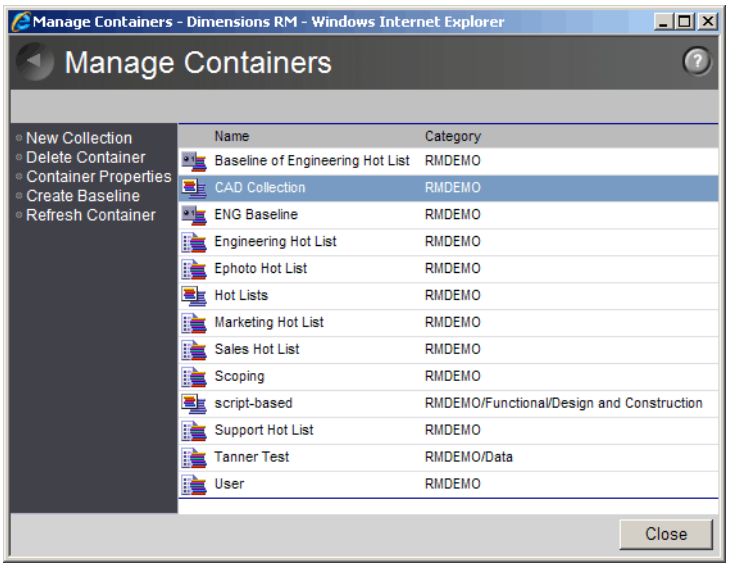
> **TIP** To limit the listed reports to those of a specific category, select a category from the **Query** category list. To quickly locate a category in the list, type the name of the category in the **Find** box of the expanded category list.

7 Click **Add**.

Deleting a Collection

To delete a collection:

1 Click **Manage Containers** on the **Home** view. The **Manage Containers** dialog box opens.



2 Select the collection you want to delete, and then click **Delete Collection**.

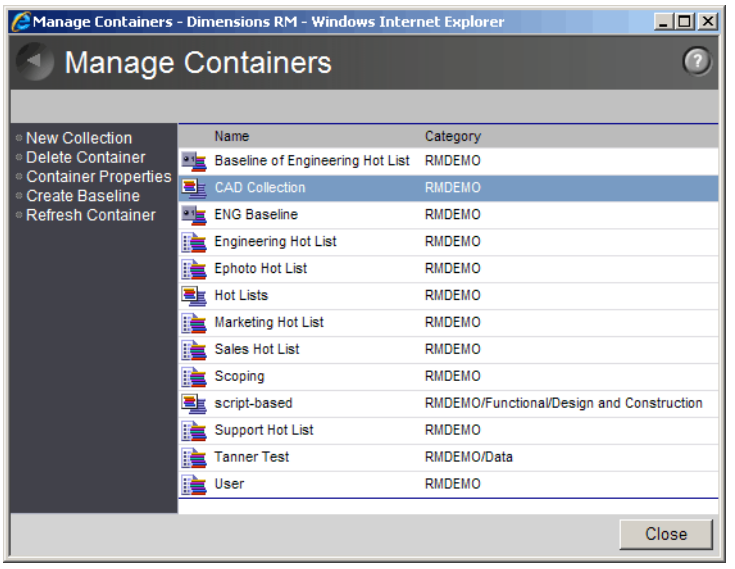
3 When prompted to confirm the deletion, click **OK**.

Updating Collection 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 Click **Manage Containers** on the **Home** view. The **Manage Containers** dialog box opens.



2 Click **Collection Properties**. Type the new name. You can also add or change the description.

3 If collection rules were defined for this collection, you can modify these as well. See "Adding a Collection" on page 145 for detailed information on adding new collections and defining collection rules.

Refreshing the Content of a Collection

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.

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 box, and the **Update** button is disabled.
- You can base a baseline on a query, that will generate dynamically when you run it.

To baseline a collection:

1. Click **Manage Containers** on the **Home** view. The **Manage Containers** dialog box opens.
2. Select a collection from the list of containers, and then click **Create Baseline**. The **Manage Containers -> Create Baseline** dialog box opens.
3. In the **Baseline Name** box, type the name of the baseline. Note the following:
   - Do not use Oracle reserved words in baseline names.
   - A baseline name can contain a maximum of 256 characters.
4. *Optional* In the **Description** box, type a description of the baseline. The maximum length of the description is 512 characters.
5. From the **Category** list, choose 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.

6. To quickly locate a collection in the list, type the name of the collection in the **Find Container** box.

7 Select one of the following options:

- **Based on Selection Container(s).** If you want to baseline one or more collections or baselines, select **Based on Selection Container(s)**, and 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.** If you want to baseline the results of a query, select **Based on Query**, and 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.

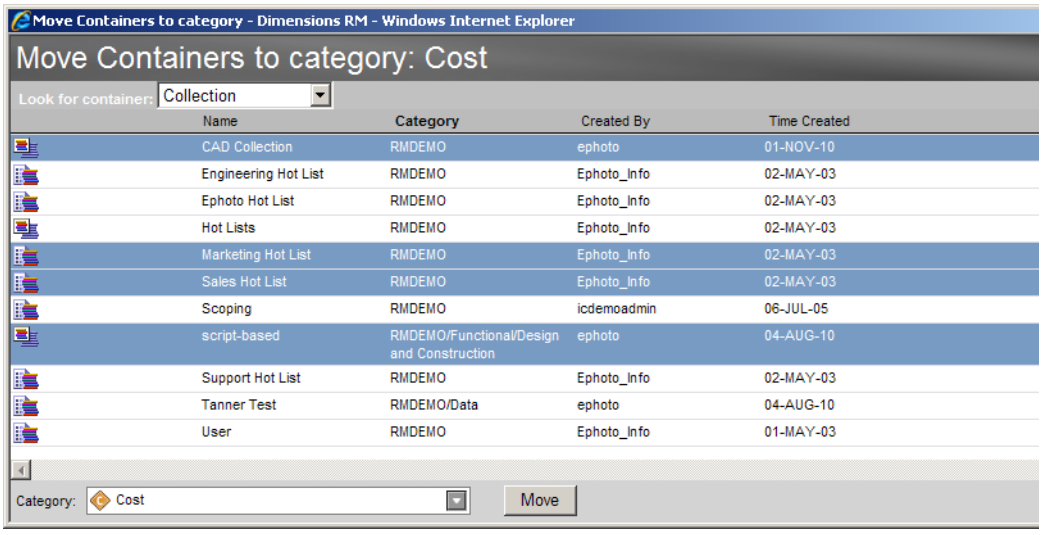
8 Click **Create Baseline**.

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 Click the **Move Containers** ( ) button from the **Home** or **Requirements** view. The Move Containers to category dailog box appears.



2 In the **Look for container** list, select the type of container to be moved: **Baseline**, **Collection**, **Document**, or **Snapshot**. 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 In the **Category** list, 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.

Chapter 9

Importing Requirements

Importing Requirements from Microsoft Word Documents 154

Importing Requirements from an XML File 157

Importing Requirements from a CSV File 158

Importing Requirements from Microsoft Word Documents

You can import requirements directly from Word documents in the RM Browser client, without using the RM Import tool. Import requirements to either create new requirements or to update existing requirements.

When to Import Using RM Browser?

Import requirements from Microsoft Word documents using RM Browser in the following circumstances:

- You can import without first defining import templates.
- You can perform an automatic analysis of document and table structures as part of the import.
- You can import into multiple classes.
- You can interactively select what to import as you are performing the import.
- You want to import a document with a single requirement into a requirement in RM.

There are some times of content that you must use RM Import to import. See "Import Constraints" on page 154.

What Can You Import?

You can choose to import any of the following from a Microsoft Word document:

- Requirements text stored in tables. See "Store all requirements in tables utilizing consistent, pre-defined format." on page 155.
- Currently selected content, to import only the content that you have selected from the Word document.
- Rich text - which is then converted into HTML formatting tags
- The entire document, to import all content from the Word document. See "Consistently structure the Word document using Heading formats." on page 155.

Import Constraints

You cannot currently import the following using the import feature in RM Browser:

- Sub-requirements
- Tables contained withinS the requirements tables

If you need to import these, you may instead use the RM Import tool.

How is Imported Content Structured?

When you choose to import entire documents or large sections of documents, the content will be structured according to the use of headings in the document. For example, the headings in the document might be mapped as follows:

Document format	RM format
Heading 1	Chapter
Heading 2	Sub-chapter
Heading 3	Requirements

All requirements should be organized into tables in the Word document. The requirements tables will be imported as is.

Setting Up Import Using RM Browser

To import requirements from Microsoft Word using RM Browser, you must take the following steps to ensure that import works correctly.

Consistently structure the Word document using Heading formats.

This is relevant if you will import entire documents or sections of documents and want to include content that is not contained within tables. For example, a format called ***Heading 1*** should correspond to the Chapter in Dimensions RM, ***Heading 2*** should correspond to a sub-chapter headings, and so forth.

Store all requirements in tables utilizing consistent, pre-defined format.

Requirements should all be stored within tables in the Word document, in one of the following formats.

Simple Format

Use this simple format if you will store requirement numbers, IDs, titles, and text in the document. In this format, the "Class_Name" field next to the KEYWORDS column header sets the requirement class for all of the requirements in the table. You can also choose the class when importing.

KEYWORDS	Class_Name		
#	**Rqmt ID**	**Title**	**Text**
3.1.3.1	MRKT_000001	EPhoto will be an online photo album	The ePhoto system shall enable the user to browse an on-line photo album. It shall look and feel like an electronic photo album, just like the one on the coffee table.
3.1.3.1.1	MRKT_000024	Stored photo slideshows	The ePhoto system shall provide the capability to create a slide shows of stored photos.

Complex Format

Use this complex format to store requirement attributes in the Word document. The second and third rows of the table store values for several attributes. When you import a

requirement with this format, RM Browser automatically maps the values in the second row of the table to requirements attributes. In this example, the table includes five attribute values: REQ_ID, REQ_LVL, REQ_CPX, REQ_TYPE, and BLOC.

Title	Periodic connections			
REQ_ID	**REQ_LVL**	**REQ_CPX**	**REQ_TYPE**	**BLOC**
RMGT_0003	PO	C2	F	SOFTWARE/TR-069 AGENT
KEYWORDS	REMOTE_MANAGEMENT			
DESCRIPTION				
It must attempt to establish a session (see §3.7.4) every X seconds. The value of X could be found in the configuration under the value: jkk (default value is 5 days). The Inform method must contain an event "2 PERIODIC". This event could occur in conjunction with a "0 BOOTSTRAP" event.				

If mandatory attribute values are not provided, you will be prompted to provide the attribute values during import.

Importing Requirements from Microsoft Word

To import requirements from Microsoft Word:

1. Fully enable Active X controls in your browser.
2. In RM Browser, select the Administration view.
3. Select Word Import.
4. In the File Name field, enter the path or browse to select the Word document to import.
5. Choose whether to Create, Update, or Replace content from the Word document.
   - Choose **Create** to add new content and requirements to RM.
   - Choose **Replace** to create a versions of existing requirements using the new content from the Word document. his will only update existing requirements that have since been changed in the Word document.
   - Choose **Update** to update existing versions of requirements with new content from the Word document, without creating new versions. This will only update existing requirements that have since been changed in the Word document.
6. Choose to import **Tables only**, **Selection only**, or **Entire Document**. See "What Can You Import?" on page 154. If you choose Selection only, you must then select specific attributes to import.
7. As needed, specify the class for the tables that you are importing. If applicable, select the **Apply to tables with same/identical column structure** to assign a common class to all tables that share a column structure.
8. When you have finished, click **Import**. An MS Word Import screen appears that displays the content you have chosen to import. Click Import to complete the import.

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.

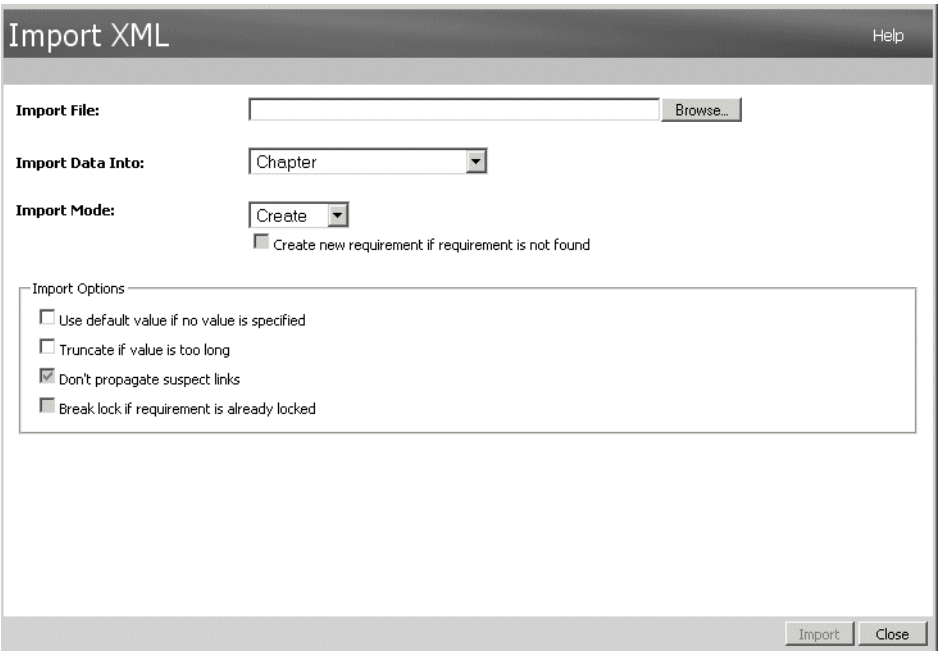
For example:

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 Import** from the **Home** view. SThe **Import XML** dialog box 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.

Mode	Description
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 **Home** view.

2 Click the **CSV Import** button.

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.
   - **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 10

Administering RM Browser

Managing Categories	164
Specifying Project Settings	165
Changing the Columns Displayed in Quick Search Results	168
Customizing the Editable Grid	169

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. On the **Home** view, click the **Manage Categories** button.The **Manage Categories** dialog box 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 **Add**.

Deleting a Category

To delete a category:

1. On the **Home** view, click the **Manage Categories** button. The **Manage Categories** dialog box 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. On the **Home** view, click the **Manage Categories** button. The **Manage Categories** dialog box 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 **Rename**.

Moving a Category

To move a category:

1 On the **Home** view, click the **Manage Categories** button.The **Manage Categories** dialog box opens.

2 Drag and drop the category to the desired location in the tree.

Specifying Project Settings

The following sections describe how to specify general 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.

To specify the concurrent editing mode:

1 Click the **Settings** button at the bottom of the screen. The Project Settings dialog box 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.

NOTES 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 Click the **Settings** button at the bottom of the screen. The Project Settings dialog box appears.

2 Type the number of minutes in the **Client session idle timeout (minutes)** box.

3 Click **OK**.

Specifying the Number of Category Trees to Display

You can specify how many levels of expansion should occur in category controls (for example, in the category tree in Requirement View).

To specify the number of levels of expansion:

1 Click the **Settings** button at the bottom of the screen. The Project Settings dialog box appears.

2 Type the number of levels in the **Category tree levels of expansion** box. If you do not type a number in this box, all category levels are expanded.

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 106.

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 Click the Settings button at the bottom of the screen. The Project Settings dialog box 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 Content of a Collection" on page 148.

To automatically refresh containers based on queries:

1 Click the Settings button at the bottom of the screen. The Project Settings dialog box 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 Click the **Settings** button at the bottom of the screen. The Project Settings dialog box appears.

2 Select the **Documents** node on the Project Settings dialog box.

3 Clear the **Publish title numbering** check box.

   Clear this check box if you want to create your own styles in Word for chapters and 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.

4 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 Click the **Settings** button at the bottom of the screen. The Project Settings dialog box 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.

Allowing Linking to Baselined Objects

By default, Dimensions RM users cannot create new links to objects that have been included in baselines. If you want to allow your users to define and modify links to baselined objects, complete this project.

To allow linking to baselined objects:

1 Click the **Settings** button on the bottom of the application window to display the Project Settings dialog box.

2 Click the **General** node on the left to display general project settings.

3 Select the **Allow creating links for baselined objects** checkbox.

4 Click **OK**.

Changing the Columns Displayed in Quick Search Results

The quick search pane in Requirements view allows users to quickly run a query to see the content of any category based on the criteria they specify. By default, system display properties determine the columns that are displayed in the search results for a specific class. You can change the columns that are displayed for a class in a project and the order of the columns. Users can override the project display properties and personalize their quick search results.

To change the columns displayed in quick search results:

1 Click the **Settings** button at the bottom of the screen. The Project Settings dialog box appears.

2 Select the **Quick Search** node.

3 In the **Choose a class** list, select the class. The **Attributes to Display** and **Sorting Order** sections are displayed.

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

   a On the left in the **Attributes to Display** list, select the attribute.

   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 In the **Sorting Order** list, select an attribute.

   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 To specify how you want data sorted, use the up and down arrows to the right of the sort list.

   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 **Dewey decimal** button to sort by paragraph number. Then select **Priority** and click the **ASCII** button if you want the requirements with the same paragraph ID sorted by the priority assigned to them.

6 Select the **Automatically run default query** check box if you want the quick search to run when you open Requirement View. This option is selected by default.

7 Select the **Automatically activate query across all requirement versions if baseline or snapshot is selected** option to, by default, include all versions of requirements in queries when you are querying based on a snapshot or a baseline.

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

9 Click **OK**.

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.

TIP In the Document view, you can hide the **#** column in the grid layout. See "Working in Paragraph or Grid Layout" on page 39.

Chapter 11

Administering Web Forms and Templates

Customizing Web Forms	172
Creating Templates to Publish Requirements	183
Defining Headers and Footers for Published Documents	184
Defining Custom Styles for Published Documents	185
Publishing a Document with File Attachments from a Separate Server	185
Changing the Default Settings of the RM Browser Text Editor	186
Configuring the Expansion and Collapse of RM Browser Sections	186
Creating Custom Login Alert Pages for RM Browser	186
Add a Custom Logo to RM Browser	187

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 173.

Template Processing

A templates directory (`<RM Install Dir>\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 186.
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 177 and "Helper Functions" on page 180 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 177 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 180 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. For more information about how users select the template, see the "RM Browser" chapter in the *User's Guide*.

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.

NOTE Use the **Save As** command to save the Word document with a name such as "Marketing Requirements" and select the type "HTML." You can also work directly in an HTML document when you create a template.

4. Rename the document to `<Class Name>.txt`.

IMPORTANT! The document must have the same name as the class, and must have a .txt extension.

5. If you want to decrease the size of the published files, remove extra formatting such as underlining or italics, and remove the `<style></style>` section.
6. Store the .txt file in the following location:

   `<RM Install Dir>\rtmBrowser\conf\<database>\<project>\publish templates\<template>`

   where `<template>` is what you want displayed in the list in Documents View.

The template is now available for users to select in Documents View.

7 Repeat this procedure for each class for which you want a custom template.

NOTE If there are files in the `<RM Install Dir>\rtmBrowser\conf\<database>\<project>\publish templates\<template>` directory, they are used and are available from the **Format Document** dialog box in Documents View. Otherwise, the style and header files defined for each project (if any) in the `<RM Install Dir>\rtmBrowser\conf\<database>\<project>` directory are used.

For information about creating the style and header files in the latter case, see "Defining Headers and Footers for Published Documents" on page 184 and "Defining Custom Styles for Published Documents" on page 185.

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 Dir>\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 184.
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 Dir>\rtmBrowser\conf\<database 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 `<RM_Install_Dir>\rtmBrowser\conf` directory.

  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.

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_Dir>\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.

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_Dir>\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 173.

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 <installation directory>\RM\rtmBrowser on the RM server:
   - 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.

For example, if your users use Internet Explorer with Dimensions RM 2009 R2 installed to the default location on a Windows server, then you must create the following file:

c:\Program Files\Serena\Dimensions 2009 R2\RM\rtmBrowser\warning.html

Add a Custom Logo to RM Browser

You can display your own logo in the RM Browser.

To add a custom logo:

1. Create a logo with dimensions of 112 by 30 pixels. Save it an a PNG with the filename Customer_Logo.PNG.
2. Copy the logo into the /imagesnew directory under the Dimensions RM installation directory.

Chapter 12

Script Syntax

Overview	190
SELECT Statement	190
CALCULATE Statement	196
XREF Statement	198
PLUS Statement	200
COMMENT Statement	200

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.

NOTES 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. There are four types of commands that 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.

NOTES 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 195).

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*.

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*, *Home 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.

Home 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 Home 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.

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*, *Home 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*, *Home 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*,*list attribute*, *numeric attribute*, *text attribute*. Contrast with *implicit attribute*.

Index

A

alphabetic sort 32, 99, 117, 124
animationspeed Web form option 175, 186
attachments 52, 111
attributes
    copying 104
Auto load document check box 167
autoloading documents, setting 167

B

baselining 148

C

categories
    adding 164
    deleting 164
    managing 164
    maximum name length 164
    moving 165
    renaming 164
    specifying number of trees to display 166
categories, moving requirements between 133
change requests
    proposing a new requirement 106
    requesting a new requirement 106
    reviewing 132
    submitting 106, 131
Chapter class 36
chapters
    unlocking 122
classes
    creating queries 83
collections
    baselining 148
    creating 145
    deleting 147
comments
    adding 130
    replying to 131
    reviewing 131
comparing a document and its snapshot 47
concurrent editing mode 165
copying requirement URL to clipboard 110
custom styles in Document View 185
customizing
    Web pages 172
customizing the Editable Grid 169
cyclic relationship 115

D

deleting requirements 134
demonstration projects 18
detail pane 38
discussions 130
Document View
    defining custom styles for published documents 185
    defining headers and footers for published documents 184
    preventing title numbers from being published 167
    publishing a document with file attachments from a separate server 185
documents
    comparing 47
    creating in Documents View 42
    creating snapshots 46
    creating Word 51
    deleting 45
    Documents View 36
    editing 44
    opening 44
    setting autoloading of 167
Documents View
    adding a requirement 59
    comparing a document and its snapshot 47
    creating a chapter 56
    creating a document snapshot 46
    creating a new document 42
    deleting a document 45
    deleting a requirement 45
    detail pane 38
    document differences report 50
    document properties 54
    editing a chapter 58
    editing a document 44
    finding and replacing character strings 60
    limited permissions 62
    navigation tree 37
    opening a document 44
    overview 36

paragraph layout 39
printing 39
publishing Microsoft Word documents 51
removing a chapter 58
requirement difference summary 49
saving a document with another name 55
specifying a template for published documents 39
viewing attachments 52

E

Editable Grid, customizing 169
editing mode 165

F

file attachments 111
filters
copying 82
deleting 82
moving 82
running 82
find and replace, Documents View 60

G

grid view 28

H

headers and footers in Document View 184
Help 17
history, requirement 123
Home View 22
customizing 23
HTML formatting 110
HTML text editor 186

L

links
creating 113
finding linked requirements 115
removing 113
suspect 117
lock management
unlocking chapters 122
unlocking requirements 122

M

merging requirement changes 119
moving requirements between categories 133

N

navigation tree 37
numbering, preventing from being published from Document View 167
numeric sort 32, 99, 117, 124

O

operators in RM Browser 91

P

paragraph layout 39
passwords, changing 16
passwords, demonstration projects 18
polls
built-in queries 130
closing 129
creating 127
modifying 128
overview 126
viewing results 129
voting 129
printing 39, 72, 76, 111, 138
projects
demonstration 18
prompts 82, 83
Publish Title check box 43

Q

QLARIUS_RM project 18
queries
creating class queries 83
creating relationship queries 85
creating traceability queries 87
editing 87
printing results 138
saving results 135
quick search 29
changing displayed columns 168
changing the columns in the search results 31
restoring the quick search pane 31
running a query 30

R

refreshing
    data 138
Relationship Constraints tab 93
relationships
    creating queries 85
removing requirements 134
Requirement View
    specifying number of category trees to display 166
requirements
    attaching a file 111
    creating 102, 106
    deleting 45, 134
    editing 106
    history 123
    importing from XML files 157
    linking 113
    merging changes 119
    printing 72, 111
    removing 134
    unlocking 122
Requirements View 26
requirements, copying 104
requirements, moving between categories 133
requiremnt URL, copying to clipboard 110
RM Browser 93
    attaching a file to a requirement 111
    Attribute Constraints tab 90
    basics 13
    changing your password 16
    common dialogs 89
    creating a new object 102
    creating class queries 83
    creating relationship queries 85
    creating traceability queries 87
    deleting requirements 134
    Display Options tab 97
    Documents View 36
    editing a query 87
    editing requirements 106
    getting Help 17
    Home View 22
    HTML formatting 110
    linking requirements 113
    logging in 14
    logging out 18
    managing filters, scripts, and traceability reports 82
    operators used in queries 91
    organizing collections 143
    overview 12
    participating in discussions 130
    polling 126
    printing query results 138
    quick search 29
    refreshing data 138
    remembering views 14
    removing requirements 134
    Requirements View 26
    reviewing change requests 132
    RM Home page 22
    running filters, scripts, and traceability reports 82
    saving query results 135
    session timeout value, changing 165
    submitting change requests 131
    switching to another project 16
    Traceability View 70
    viewing contact information 17
    viewing system information 17
    viewing version information 17
RM Home page
    using 22
RMDEMO project 18
running a filter, script, or traceability report 82

S

scripts
    copying 82
    deleting 82
    moving 82
    prompts 82, 83
    running 82
session timeout value, changing 165
snapshots 46
suspect links 117

T

traceability reports
    copying 82
    deleting 82
    moving 82
    printing 76
    running 82
Traceability View
    creating a new linked requirement 104
    creating a new traceability report 73
    customizing the tree 77
    deleting a traceability report 75
    editing a traceability report 76
    opening a traceability report 75
    overview 70
    specifying classes to display 74
    understanding the traceability tree 71

V

voting in a poll 129

W

Web pages, customizing 172

X

XML files, importing 157