SERENA®

DIMENSIONS® CM and RM

Dimensions CM–Dimensions RM ALM Integration Guide

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Welcome to Serena Dimensions

About Serena Dimensions

Thank you for choosing Serena® Dimensions®, a product suite that can comprises one or more of the following components:

- Serena® Dimensions® CM

  Dimensions CM is a powerful process management and change control system that will revolutionize the way you develop software. Dimensions CM helps you organize, manage, and protect your software development projects on every level—from storing and tracking changes to individual files, to managing and monitoring an entire development cycle.

  Functionality provided by Dimensions CM includes:

  - Advanced Software Configuration Management (SCM) that is tailorable to your needs, for example, to the needs of the developer (having particular strengths in parallel development and performance) or to the needs of software development requiring strong governance and auditability.
  - Issue (request) management.
  - Process management.
  - Deployment management.
  - Release management.
  - Build management.
  - Replication management.
  - Release management.
  - z/OS client.
  - Powerful client reporting functionality.
  - Integration with Dimensions RM.

- Serena® Dimensions® RM

  Dimensions RM offers full requirements management and traceability throughout the development lifecycle by centralizing and organizing requirements using role base views and a user configurable requirements process.

Purpose of this manual

This manual describes how to:

- Set up the Application Lifecycle Management (ALM) integration between Dimensions CM and Dimensions RM.
- Manage Dimensions RM requirements within Dimensions CM.
- Configure an IIS Server for the ALM Integration.

For more information

Refer to:

- The *Getting Started with Dimensions CM* manual for a description of the Dimensions CM documentation set, a summary of the ways to work with Dimensions CM, and instructions for accessing the online help.
- The *Dimensions CM User's Guide* for a description of the client tools and how to work with them.

- The Dimensions RM User's Guide for a description of how to use Dimensions RM to create, manage, and track requirements during the lifecycle of a Dimensions RM project.

Edition status

The information in this guide applies to the releases shown in the table in "Prerequisites For the Dimensions CM to Dimensions RM Integration" on page 10. This edition supersedes earlier editions of this manual.

E-Learning Tutorials

E-Learning tutorials for Dimensions CM can be accessed at the following public Web site:

http://www.serena.com/serenacourseware/dimensions

E-Learning tutorials for Dimensions RM can be accessed at the following public Web site:

http://www.serena.com/serenacourseware/dimensionsrm/import

Typographical Conventions

The following typographical conventions are used in the online manuals and online help. These typographical conventions are used to assist you when using the documentation; they are not meant to contradict or change any standard use of typographical conventions in the various product components or the host operating system.

italics	Introduces new terms that you may not be familiar with and occasionally indicates emphasis.
bold	Emphasizes important information and field names.
UPPERCASE	Indicates keys or key combinations that you can use. For example, press the Enter key.
`monospace`	Indicates syntax examples, values that you specify, or results that you receive.
`monospaced italics`	Indicates names that are placeholders for values you specify; for example, *`filename`*.
`monospace bold`	Indicates the results of an executed command.
vertical rule |	Separates menus and their associated commands. For example, select File | Copy means to select Copy from the File menu. Also, indicates mutually exclusive choices in a command syntax line.
brackets []	Indicates optional items. For example, in the following statement: `SELECT [DISTINCT]`, DISTINCT is an optional keyword.
. . .	Indicates command arguments that can have more than one value.

Printing Manuals

As part of your Dimensions license agreement, you may print and distribute as many copies of the Dimensions manuals as needed *for your internal use, so long as you maintain all copies in strict confidence and take all reasonable steps necessary to ensure that the manuals are not made available or disclosed to anyone who is not authorized to access Dimensions under your Dimensions license agreement*.

Contacting Technical Support

Serena provides technical support for all registered users of this product, including limited installation support for the first 30 days. If you need support after that time, contact Serena Support at the following URL and follow the instructions:

http://www.serena.com/support/

Language-specific technical support is available during local business hours. For all other hours, technical support is provided in English.

The Serena Support Web page can also be used to:

- Report problems and ask questions.
- Obtain up-to-date technical support information, including that shared by our customers via the Web, automatic E-mail notification, newsgroups, and regional user groups.
- Access a knowledge base, which contains how-to information and allows you to search on keywords for technical bulletins.
- Download fix releases for your Serena products.

Supported Platforms

For the exact details on which RDBMS, platforms, chip-architectures, operating system releases, and releases of Serena and third-party software (such as IDEs) are supported, please see:

- The Dimensions CM readme file.
- The Serena public Dimensions CM Supported Platforms Web site at:

  http://support.serena.com/roadmap/Product.aspx?sel=PVDIMENSIONS

- The Dimensions RM readme file.
- The Serena public Dimensions RM Supported Platforms Web site at:

  http://support.serena.com/roadmap/product.aspx?sel=RTM

Chapter 1

Setting Up the ALM Integration Between Dimensions CM and Dimensions RM

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What is the ALM Integration Between Dimensions CM and Dimensions RM?

The Application Lifecycle Management (ALM) integration between Serena® Dimensions® CM and Serena® Dimensions® RM lets you associate Dimensions RM requirements to Dimensions CM requests.

The ALM integration enables you to manage Dimensions RM requirements in Dimensions CM and, conversely, manage Dimensions CM requests in Dimensions RM. For example, when you add a requirement to or remove a requirement from a Dimensions RM container of type baseline or collection, Dimensions CM is notified with the relevant information; also, Dimensions RM baselines flow to Dimensions CM and Dimensions CM baselines flow to Dimensions RM.

NOTE The ALM integration itself is implemented at low level as follows (you do *not* need to access any of these APIs to actually use the ALM integration):

- Dimensions CM calls Dimensions RM Web services.
- Dimensions RM calls Dimensions CM C API and "pcms" API.

In the context of an ALM integration, you can:

- Associate Dimensions RM projects a Dimensions CM products, see "Associating Dimensions RM Projects to Dimensions CM Products" on page 12.
- Associate Dimensions RM containers of type baseline or collection to Dimensions CM projects/streams, see "Associating Dimensions RM Baselines or Collections to Dimensions CM Projects/Streams" on page 15.

Prerequisites For the Dimensions CM to Dimensions RM Integration

To set up ALM the associations, the following prerequisites must be satisfied:

- Both Dimensions CM and Dimensions RM must have been installed and both must be at release levels as shown in the tables below:

	CM 12.2 / 12.1.1	**CM 12.1/ 12.1.0.1**	**CM 2009 R2.x**	**CM 2009 R1.x**
RM 11.2.2	Supported (SSO Used) Supported (SSO Not Used)	Not Supported (SSO Used) Supported (SSO Not Used)	Supported	Not Supported
RM 11.2.1	Not Supported	Not Supported	Supported (Tiers 1 & 2)	Supported (Tier 2)
RM 2010 R1	Supported	Supported	Supported	Supported
RM 2009 R2	Not Supported	Not Supported	Supported	Supported
RM 2009 R1.01	Not Supported	Not Supported	Supported	Supported

- A Dimensions CM desktop client must be installed on the Dimensions RM web server machine.
- For certain installations (see the Dimensions RM *Installation Guide*), it is recommended that Dimensions RM databases have exclusive use of their own Oracle instance. In those circumstances, if you are using Dimensions CM against an Oracle RDBMS, you must make sure that it does not share the same Oracle instance as that used by Dimensions RM.
- Before you can begin to establish any of the Dimensions RM to Dimensions CM associations referred to below, the `rmcm.xml` configuration file on the Dimensions RM web server machine must first be edited to include the URL of the Dimensions CM server. Proceed as follows:

  a On the Dimensions RM web server machine, navigate to:

  ```
  <RM-Install-Directory>\conf
  ```

  b Open the following configuration file in a text editor:

  ```
  rmcm.xml
  ```

  This file has the following lines:

  ```
  <project>
         <!--  CMServer url="http://localhost:8080"   -->
         <CMServer url="" />
  </project>
  ```

  c Update the Dimensions CM URL with the correct information for the Dimensions CM server. If Dimensions CM is installed on the same machine as the Dimensions RM web server and was installed with the default port number `8080`, then the commented out URL on the preceding line will be the appropriate URL.

- The following Dimensions RM to Dimensions CM associations must have been established by a Dimensions RM administrator:
  - The requisite Dimensions RM projects to one or multiple Dimensions CM products (see "Associating Dimensions RM Projects to Dimensions CM Products" on page 12).
  - The requisite Dimensions RM baselines or collections to one or multiple Dimensions CM projects/streams (see "Associating Dimensions RM Baselines or Collections to Dimensions CM Projects/Streams" on page 15).

Conversely, to enable Dimensions RM users to look at Dimensions CM requests, after the above steps have been completed, a Dimensions CM user must associate Dimensions RM requirements to Dimensions CM requests.

Limitations/Recommendations

- If Dimensions RM has more than on URL (HTTP and HTTPS), Dimensions CM requests will *only* display if the RM Browser windows are using the exact URL that is registered with Dimensions CM. Dimensions CM will only accept requests from the registered URL. If HTTPS was used to set up the ALM association between Dimensions CM and Dimensions RM, then using Dimensions RM from HTTP - Dimensions CM information (requests) will not be returned to Dimensions RM.

- The user name and password of the user involved in ALM integration (for example, dmsys) must be the same for both Dimensions CM and Dimensions RM. The user name and password are case sensitive in these circumstances.
- Dimensions RM does *not* support connections/associations to more than one Dimensions CM server.
- For consistent synchronization, once a Dimensions RM project to Dimensions CM product association is established it is recommended that it never be removed.
- For consistent synchronization, once a Dimensions RM baseline or collection to Dimensions CM project or stream association is established it is recommended that it never be unassociated.
- Never delete a Dimensions CM project/stream until after all Dimensions RM baselines or collections are unassociated from the Dimensions CM project/stream. If this strategy is not followed, the Dimensions RM GUI will be incapable of removing the association and a Serena consultant will be required to repair both the Dimensions CM and Dimensions RM databases.
- To maintain process integrity, you must never delete a Dimensions RM baseline or collection that has any requirements related to Dimensions CM objects.
- The Dimensions CM-Dimensions RM ALM integration only works with Dimensions CM requests. The Issue Defect Management (IDM) integration, which utilizes the Serena Business Manager (SBM) for request management, is not currently supported with the ALM integration.
- The relationship between Dimensions CM requests and Dimensions RM requirements does not get replicated if using Dimensions Replicator.
- When a Dimensions CM request is related to a Dimensions RM requirement it is related to "the latest version of the requirement in the associated baseline or collection" until that request is actioned to a `FROZEN/FINAL/OFF-NORMAL` state/phase. When that occurs, the request is pinned to the current latest version of the requirement. When you action the request back again it then "floats" with the latest version again.
- You can unrelate a Dimensions RM requirement from a Dimensions CM request regardless of the state/phase of the request.
- Dimensions RM baselines are fixed—you cannot replace or update requirements in an Dimensions RM baseline. Serena recommend you only relate Dimensions RM baselines to Dimensions CM projects/streams.
- If you unrelate a Dimensions RM baseline or collection from a Dimensions CM project/stream the relationships between Dimensions CM requests and Dimensions RM requirements remain and can still be seen.

Associating Dimensions RM Projects to Dimensions CM Products

NOTE Beginning with Dimensions CM 2009 R1 and Dimensions RM 2009 R1, you can now associate multiple Dimensions RM projects with multiple Dimensions CM products. Additionally, the associations can even span different Dimensions CM base databases.

The first step in setting up the ALM integration between Dimensions RM and Dimensions CM is associating one or more Dimensions RM projects to one or more Dimensions CM products. This is usually set up once by the administrator for each Dimensions RM project and each Dimensions CM product.

Dimensions RM Project	**Dimensions CM Product**
Qlarius (stxxx)	Qlarius (qlarius@stxxx@dim10)
Qlarius (styyy)	
RMDemo (stxxx)	RMDEMO (intermediate@stxxx@dim10)
RMDemo (styyy)	RMDEMO (intermediate@styyy@dim10)

To perform the association, you need to be a Dimensions RM administrator. Provided you have those privileges:

1 Start the Dimensions RM Manage utility:

`Start | All Programs | Serena | Dimensions RM <version> | RM Manage`

2 Expand the appropriate Dimensions RM database in the left hand tree.

3 Log in as your normal administrator user (for example, `dmsys`).

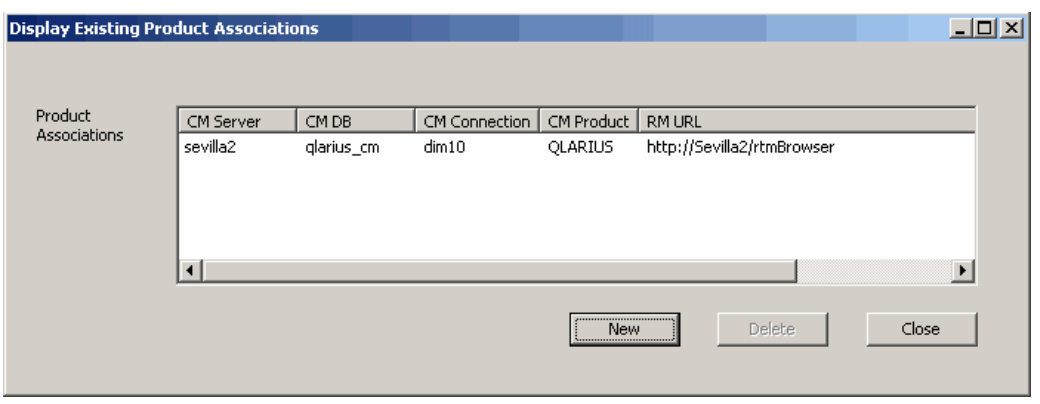
4 Select the Dimensions RM project that you want to associate to a Dimensions CM Product (for example, `RMDEMO`).

5 Select one of: `File | Associate to Dimensions CM`; click the **Associate to Dimensions CM** toolbar button ;or right-click the selected Dimensions RM project and select **Associate to Dimensions CM...** from the context menu.

NOTE The **Associate to Dimensions CM** command is enabled if a Dimensions CM client is installed on the same computer that is running RM Manage. If the command is disabled, install the Dimensions CM client and then restart RM Manage.

Existing Associations

If there are existing associations, you will first be presented with the **Display Existing Product** associations dialog box.



Review the existing associations. If you wish to create a new association, click **New**; alternatively, if you wish to remove an association, click on the appropriate associations and click **Delete**. Proceed to Step 6.

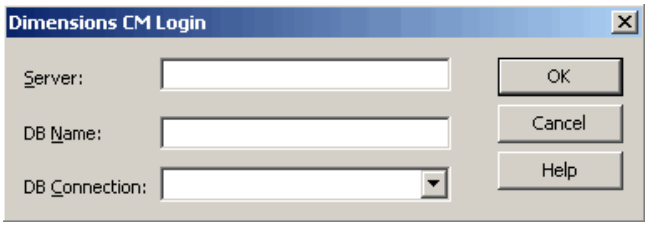
CAUTION! Unassociating a Dimensions RM project from a Dimensions CM product is a destructive action that will remove all of the relationships between Dimensions RM requirements and Dimensions CM requests.

No Existing Associations

If there are no existing associations, proceed to Step 6.

6 A **Dimensions CM Login** dialog box will appear.

NOTE To successfully log in to a Dimensions CM server, you must either be configured to log in using LDAP or log into Dimensions RM and Dimensions CM with the same user name and password.



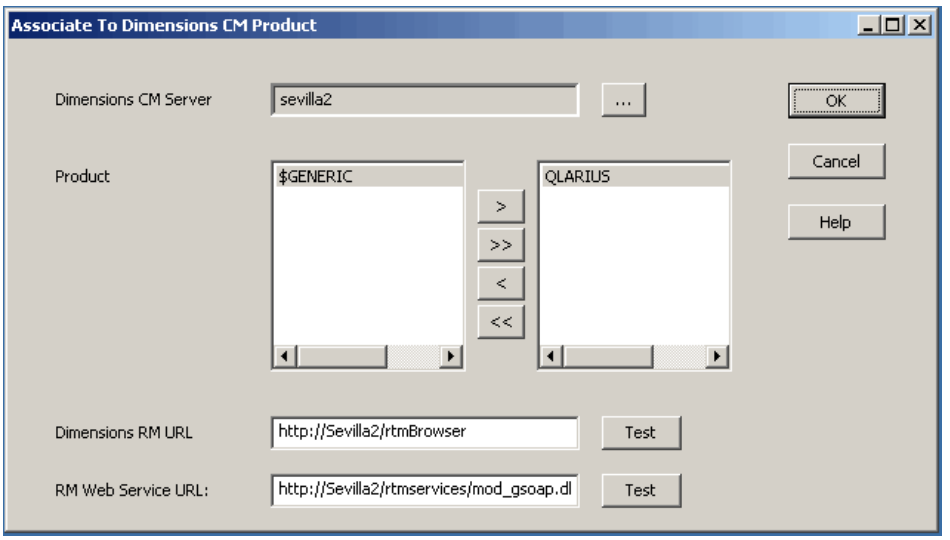
a Fill in this dialog box as you would a normal Dimensions CM login, that is:

- The Dimensions CM Server name (the hostname or IP address).
- The Dimensions CM database name (for example, `cm_typical`).
- The Dimensions CM database connection string (for example, `dim10`) .

b Click **OK**.

7 The **Associate to Dimensions CM Product** dialog box appears, with the **Dimensions CM Server** and **Product** fields pre-populated with the hostname and a list of Dimensions CM products for the database name you specified in Step 6.

NOTE If the log in to Dimensions CM fails for any reason, a "Login to Dimensions Failed" message is displayed in the **Dimensions CM Server** field. Attempt to log in again by clicking the browse button next to the **Dimensions CM Server** field—this re-opens the **Dimensions CM Login** dialog box.



Proceed to establish the Dimensions RM project to Dimensions CM products associations as follow:

a In the **Product** left-hand scrolling list, select the Dimensions CM product or products that you wish to associate with the Dimensions RM project. The usual mouse selection operations apply: namely, click for a selecting a single entry, CTRL/click for selecting multiple non-contiguous entries, and click plus shift/click for selecting contiguous entries. If you wish to select all entries, click the **>>** button and proceed to Step c.

b Click the **>** button to move your selections to the **Product** right-hand scrolling list

c Check the Dimensions CM products in the **Product** right-hand scrolling list. If you have inadvertently moved any products to this list that you should not have done, you can move them back to the left-hand list by clicking the **<** button; the **<<** button will move all products back to the left-hand list.

d Click **Test** to test the automatically pre-populated URL in the **Dimensions RM URL** field. This should be the URL to the Dimensions RM Web server and the pre-populated value will normally be correct, but if the test fails you will have to edit the URL to the correct value. The default value will be:

```
http://<hostname>/rtmBrowser
```

e Click **Test** to test the automatically pre-populated URL in the **RM Web Service URL:** field. This should be the URL to the server that hosts the Dimensions RM Web service and the pre-populated value will normally be correct, but if the test fails you will have to edit the URL to the correct value. The default value will be:

```
http://<hostname>/rtmservices/mod_gsoap.dll?rtmservice
```

NOTE If the port number of the server that hosts the RM Web services is not 80, type the port number after the hostname name, separated by a colon.

8 Click **OK**.

The Dimensions RM project and Dimensions CM product are now linked. To indicate this, the Dimensions RM project icon in the Dimensions RM Manage left-hand tree will now have a small Dimensions CM (dark blue and orange) overlay icon on it, as indicated here: .

9 Exit Dimensions RM Manage.

After an association is made between a Dimensions RM project and one or more Dimensions CM products, Dimensions RM users can then associate containers with Dimensions CM projects/streams and relate requirements to Dimensions CM requests. Dimensions RM users can then display information about specific requests that are in response to requirements; and Dimensions CM users can display specific requirements that are related to their tasks.

Associating Dimensions RM Baselines or Collections to Dimensions CM Projects/Streams

The second step in setting up the integration between Dimensions RM and Dimensions CM is associating one or more Dimensions RM baselines or collections to one or more Dimensions CM projects/streams. Without this step, it will not be possible to link any

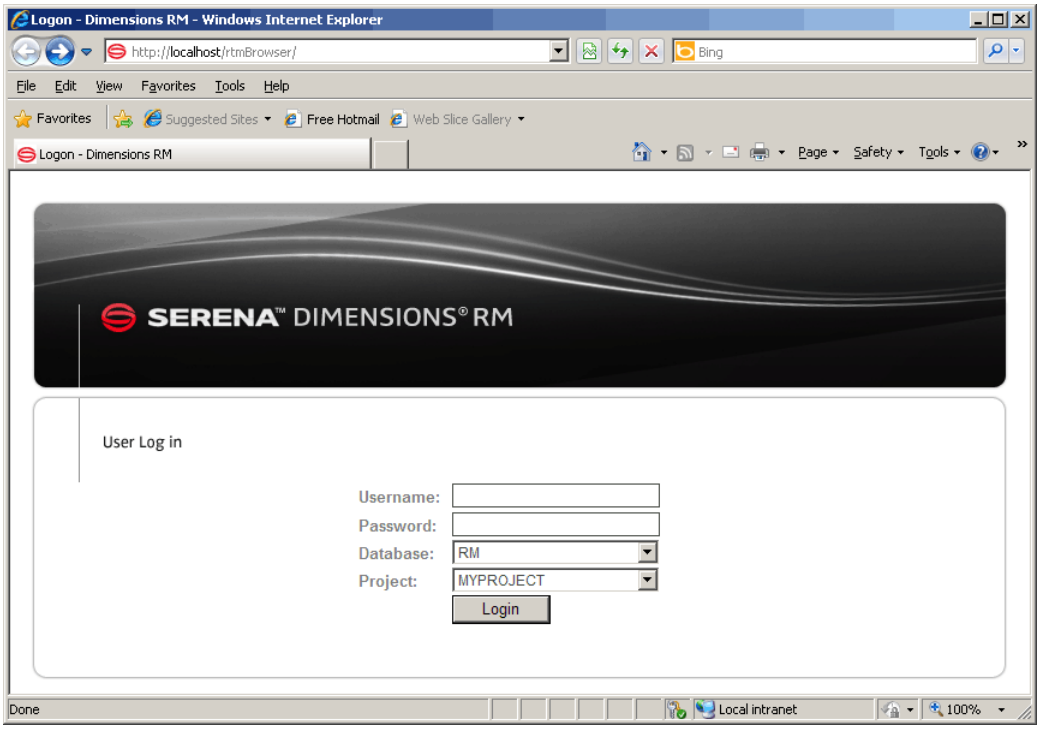
Dimensions CM requests to Dimensions RM requirements. When you add a requirement to or remove a requirement from a container, Dimensions CM is notified with the relevant information.

NOTE Parent Dimensions RM baselines or collections cannot be associated with Dimensions CM projects/streams.

To perform the association, you need to be a Dimensions RM administrator. Provided you have those privileges:

1 Log in to the Dimensions RM Web browser:

```
http://<hostname>/rtmBrowser/
```



You will need to:

a Specify the Dimensions RM username (for example, `dmsys`)

b Specify the corresponding password.

c Specify the Dimensions RM database connection string for the database.

d Click the down-arrow next to the **Project** field to populate it with the available Dimensions RM projects for the above choices.

e Select the appropriate Dimensions RM project. This will, of course, have to be a project that has previously been associated to one or more Dimensions CM products.

f Click **Login**.

NOTE If you receive an Oracle "ORA-12640: Authentication adapter initialization failed" error, proceed as follows:

a Shut down the Dimensions CM listener and the Oracle Windows services.

b On the database server, find the file `%ORACLE_HOME%\NETWORK\ADMIN\sqlnet.ora`.

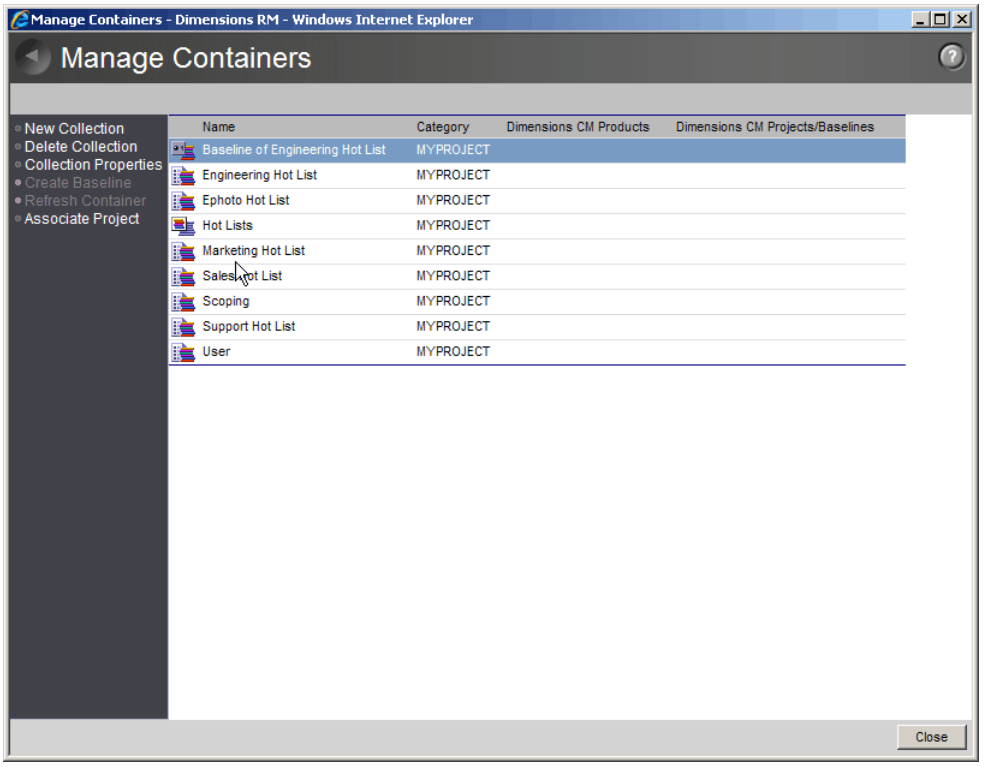
c Change the entry `SQLNET.AUTHENTICAION_SERVICES=(NTS)` to `SQLNET.AUTHENTICAION_SERVICES=(NONE)`.

d Restart Oracle and the Dimensions CM listener Windows services.

2 Select **Manage Containers** as follows:

a Click the **Additional toolbar buttons** button.

b Click the **Manage Containers** button. The **Manage Containers** dialog box appears:



3 Select the baseline or collection you would like to link to a Dimensions CM project/stream and click the **Associate Project** link on the left.

NOTE After a Dimensions RM project/stream has been associated to a Dimensions CM product, the **Associate Project** link appears but is disabled. The link is only enabled if the following conditions are satisfied:

- You logged in using LDAP or you logged in to both Dimensions RM and Dimensions CM with the same user name and password.
- You are successfully logged in to a Dimensions CM server during the Dimensions RM login.
- The Dimensions RM Web server has the Dimensions CM client installed on it.
- The administrator has assigned you the "Link Requirement to Dimensions Project" and "Associate to a Dimensions Project" permissions.

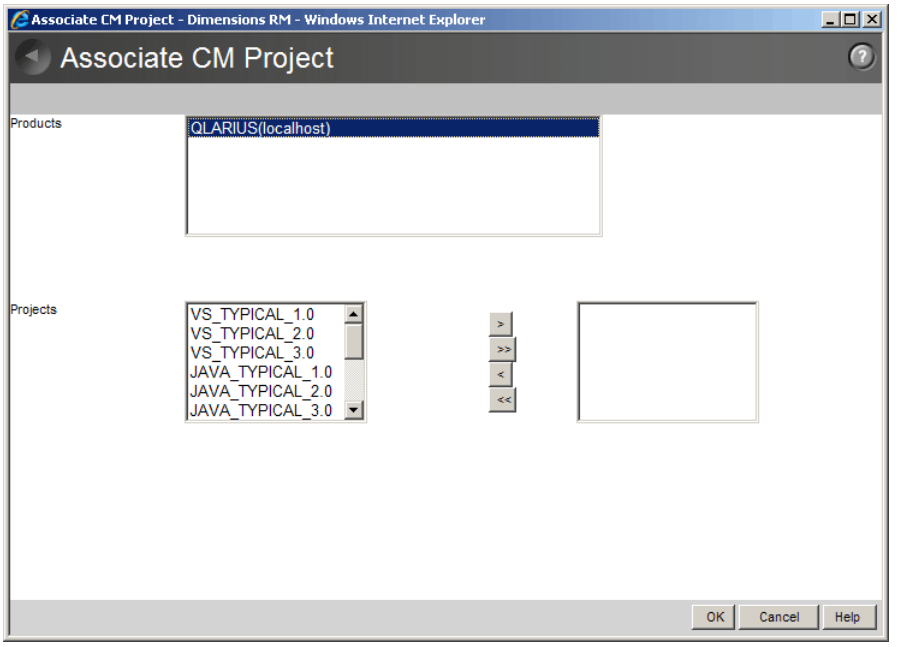
If the first three conditions are not satisfied, "<*Error connecting to Dimensions*>" is displayed in the **Dimensions CM Project** column.

For more information about the administrative task, see the *Serena Dimensions RM Administrator's Guide*.

The **Associate CM Project** dialog box appears.

4 Select a Dimensions CM product in the scrolling **Products** list.

The left-hand **Projects** scrolling list will be populated with all the Dimensions CM projects/streams available for association with the previously selected Dimensions RM baseline or collection.



Proceed to establish the Dimensions CM projects/streams to Dimensions RM baseline or collection associations as follow:

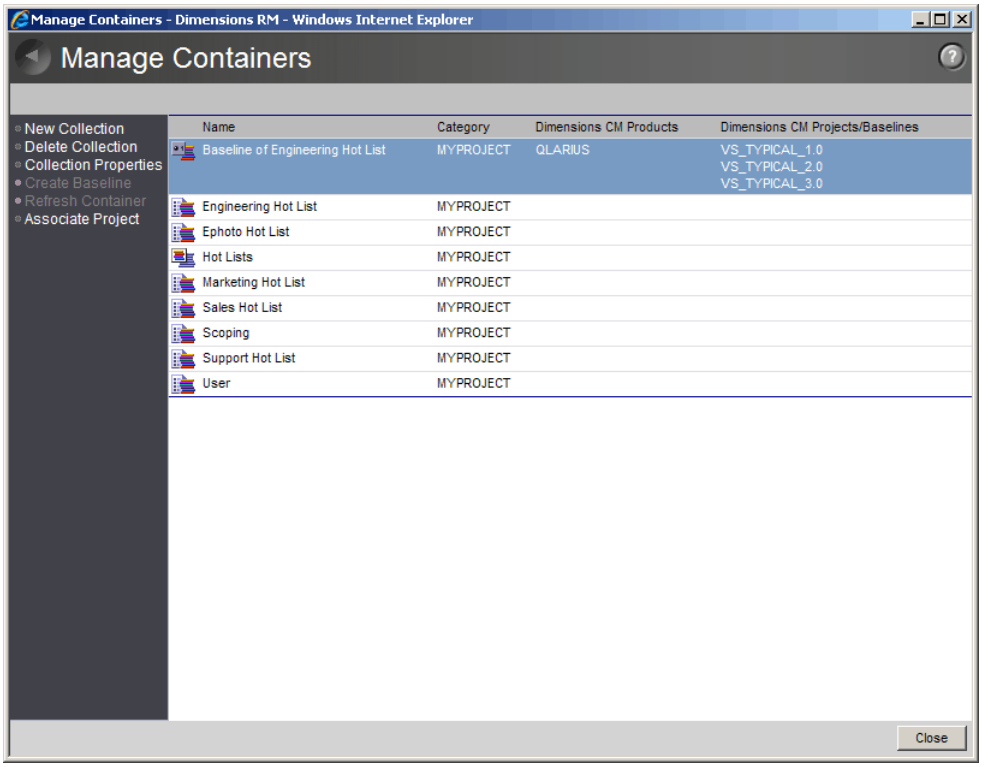
a In the **Projects** left-hand scrolling list, select the Dimensions CM project/stream or projects/streams that you wish to associate with the Dimensions RM baseline or collection. The usual mouse selection operations apply; namely, click for a selecting a single entry, CTRL/click for selecting multiple non-contiguous entries, and click plus shift/click for selecting contiguous entries. If you wish to select all entries, click the **>>** button and proceed to Step c.

b Click the **>** button to move your selections to the **Projects** right-hand scrolling list

c Check the Dimensions CM projects/streams in the **Projects** right-hand scrolling list. If you have inadvertently moved any projects/streams to this list that you should not have done, you can move them back to the left-hand list by clicking the **<** button; the **<<** button will move all projects/streams back to the left-hand list.

d Click **OK** to create the associations.

The **Associate CM Project** dialog box appears again with the new associations displayed in the **Dimensions CM Projects/Baselines** column:



5 Repeat Step 3 to Step 4 for further associations.

6 To disassociate one or more Dimensions CM projects/streams from a Dimensions RM baseline or collection:

   a Repeat Step 3.

   b In Step 4, move the appropriate Dimensions CM projects/streams from the right-hand **Projects** scrolling list in the **Associate CM Project** dialog box using the **<** or **<<** buttons.

   c Click **OK** to remove the associations.

   d The **Associate CM Project** dialog box appears again with the old associations removed from the **Dimensions CM Projects/Baselines** column.

7 Click **Close** and log out of the Dimensions RM Web browser.

8 The associated Dimensions RM containers and Dimensions CM projects/streams are now linked.

Linking a Dimensions CM Requests to Dimensions RM Requirements

Once Dimensions RM projects are associated to the Dimensions CM products and Dimensions RM containers are associated to Dimensions CM projects/streams, it is possible to link Dimensions CM requests to Dimensions RM requirements.

The linking of Dimensions RM requirements and Dimensions CM is done in the Dimensions CM clients, either the desktop client or the web client. In the appropriate

Dimensions CM client, you can now link a request in a Dimensions CM project/stream to a Dimensions RM requirement that exists in a container (one that is linked to that Dimensions CM project/stream). This is possible by performing any of the various ways of linking items together in the Dimensions CM clients.

For details on requirement operations in Dimensions CM, see "Managing Dimensions RM Requirements in Dimensions CM" on page 21.

Integrating Dimensions RM and Dimensions CM in a Replicated Environment

NOTE Dimensions CM Replicator is installed as part of a standard Dimensions CM installation; however, it requires additional licensing in order to be utilized.

Currently Dimensions RM does not have the capability to replicate Dimensions RM requirements from one repository to another; however, by carefully coordinating Dimensions CM requests, you can still fully track the fulfillment of requirements in a replicated Dimensions CM environment.

To track work on requirements across replicated Dimensions CM servers:

1. Install Dimensions CM and Dimensions RM as described in their respective installation guides, and set up the Dimensions CM environment as described in Replication chapters in the Dimensions CM *Administrator's Guide*.
2. For each requirement on the master Dimensions CM server, create a request, and relate it to the requirement.
3. As needed, create related child requests for these requests and replicate them to the other subordinate Dimensions CM sites. As work is completed on the child requests at the subordinate sites, history will be tracked by the parent requests on the master server provided Replicator is run. You can continue to review the requirements associated with the parent requests, allowing you to display detailed implementation history for each requirement.

Chapter 2

Managing Dimensions RM Requirements in Dimensions CM

In this Chapter

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Prerequisites for Managing Dimensions RM Requirements in Dimensions CM

To be able to manage Serena® Dimensions® RM requirements in Serena® Dimensions® CM, the ALM integration must be set up as described in "Setting Up the ALM Integration Between Dimensions CM and Dimensions RM" on page 9.

Dimensions CM Requests and Dimensions RM Requirements

"Requirement Development" on page 22

"Requirement Versioning" on page 22

"Action Request (AC) Changes" on page 23

Requirement Development

One of the first steps in every project is the specification of requirements. Tracking these requirements across different organizations and understanding the impact that various requirements have on cost, schedule, and time-to-market can have a dramatic effect on project success.

Dimensions RM stores requirements in a database. The requirements for a project can come from various sources, such as customers, management, marketing, quality assurance (QA), support, and field personnel. The requirements can be entered directly into Dimensions RM, or imported from a Microsoft® Word document, plain text document, comma separated value (CSV) file, or XML document (.xml) file. You synchronize Word documents or text documents with the database as requirements evolve.

You can also import requirements from other tools, such as Serena® Business Manager (formerly known as Serena® Business Mashups and TeamTrack), IBM® Rational® Software Modeler, HP Quality Center, and Microsoft® Project. For more information about the integration of Dimensions RM with these products, see the Dimensions RM documentation set.

Requirement Versioning

Dimensions RM requirements are objects that may evolve. In a Dimensions RM container (baseline, collection, document, or snapshot), updates may be made to a requirement, which essentially creates new versions of the requirement.

Because of this behavior, Dimensions CM prevents the display of the latest version of a requirement when the change request enters certain lifecycle phases (or statuses). For example, when a request is closed, it no longer makes sense for the related requirements to evolve; in this example case, the relationships must be fixed to the specific versions available at the time the request was closed (actioned to its final lifecycle state). This "fixing" of relationships mean that, once a request has been closed, the related requirements no longer reflect the latest versions in the containers.

Fixing takes place when a request enters the following phases/statuses:

- Final Status/Phase.
- Frozen Phase (but only when CM Rules are enabled).
- Off-Normal Status.

When a change request is actioned back to a normal lifecycle status, these relationships are "unfixed"; that is, the latest versions are once more shown as related to the request.

Action Request (AC) Changes

Beginning with Dimensions CM 10.1.3, the Action Request (AC) command (see the *Command-Line Reference*) and the associated desktop client and web client functionality have been changed as follows:

- When a request enters a final/frozen/off-normal phase, all relationships representing an evolving requirement are replaced with the latest `ObjectId` for that object in the originating collection (that is, the collection specified when the requirement and request were related).
- When a change leaves the frozen phase, then all "fixed" requirement relationships are replaced with evolving requirements.

IMPORTANT! When requirements are changed using the Dimensions RM "Update" function, the changes will be shown against Dimensions CM requests that are frozen/closed/off-normal; however, changes made using the Dimensions RM "Replace" function will *not* be shown against Dimensions CM request that are frozen/closed/off-normal.

What Can You Do with Requirements in Dimensions CM?

In Dimensions CM you can do the following:

- View the requirements associated with a project/stream.
- Relate requests to requirements.
- Relate baselines to requirements.
- Notify users of changes to associated requirements using the `dmemail` utility.
- Start a Dimensions RM session.

Requirement Operations in Dimensions CM

Purpose Use these operations when you wish to edit the details, attributes, or relationships of a requirement in Dimensions CM, notify users of changes to associated requirements, or to invoke Requirements Management using Dimensions RM.

Web client

To select requirements:

1 In the navigation area of the My Current Project tab or My Current Stream tab, expand the Catalog node and select the Requirements node: Requirements

The requirements that are related to the project/stream appear in the content area.

To view the requirements in a container of requirements, expand the Requirements node and click the appropriate node, for example, a collection node: or a baseline node:

2 In the content area, select one or more requirements.

See also "Dimensions CM Web Client Select Requirement Wizard (Page 1 of 2)" on page 30 and "Dimensions CM Web Client Select Requirement Wizard (Page 2 of 2)" on page 31 when selecting requirements to relate to selected requests.

To edit the details of a requirement:

PRIVILEGES To edit requirements requires the following privilege: "Perform Requirement Related Operation" (`PRODUCT_REQUIREMENTMAN`).

1 Select a requirement in the content area.

2 Click the Open button: or click the requirement name.

The Dimensions RM Browser window Edit Attributes dialog box appears (through the Dimensions RM integration). Consult the associated online help or Dimensions RM documentation for details on how to edit the attributes using this dialog box.

3 When you have finished, exit to return to the Dimensions CM web client.

To relate a requirement to an existing request:

1 On the My Current Project tab or My Current Stream tab, expand the Catalog node and select a requirement, click the Relate button: .

2 In the Relate dialog box, enter the existing request in the **Relate to** field, or use the browse button to select it.

3 Click **OK**.

NOTE When creating a baseline, you can also scope it by Requirement rather than Request. See "Creating a baseline that contains requests and requirements:" on page 27.

To create a new request to relate to a selected requirement:

1 On the My Current Project tab or My Current Stream tab, expand the Catalog node and select a requirement. Click the New Request button and select a request type.

2 In the New Request dialog box, enter the new request details in the relevant fields in the General and Attributes tabs. The **Related requirement(s)** field will, of course, be pre-populated with the selected requirement.

3 Click **OK**.

NOTE When creating a baseline, you can also scope it by Requirement rather than Request. See "Creating a baseline that contains requests and requirements:" on page 25.

Creating a baseline that contains requests and requirements:

If your items are used in builds, once requirements have been linked to requests and the work for those requests has been completed, a baseline should be created for all the items before they are used in the build. You will want to create the baseline using the requirements that were worked on for this build and project milestone. The creation of this baseline ensures the specific version of requirements, requests, and items are associated. The creation of this baseline in Dimensions CM also creates a baseline in Dimensions RM with the same name that contains the requirements that were linked or associated to the requests. The baseline in Dimensions RM will be associated with the Dimensions CM baseline that was created.

1. To create a baseline in Dimensions CM that contains the requests and requirements, you must first create the Request Baseline Template in the Dimensions CM Administration Console. This must be done before attempting to create the baseline in Dimensions CM.

2. On the My Current Project tab, expand the Catalog node and select a requirement. Click the New Baseline button: .

3. In the New Baseline dialog box, enter the new request details in the relevant fields in the General and Attributes tabs.

   When creating the baseline in Dimensions CM, you need to specify the requirements to use for the baseline. This is done through the General tab. Click the **Requirement** radio button and then enter the requirement PUIDs that will be part of the baseline (the PUID numbers can be browsed). A PUID is just a unique identifier of a requirement in Dimensions RM.

4. Click **OK**.

When the action is complete, a baseline in Dimensions CM and a baseline in Dimensions RM are created. The baseline in Dimensions CM will contain all objects (items, requests, and requirements) and the baseline in Dimensions RM will contain the requirements.

Notifying Dimensions CM users of changes to associated Dimensions RM requirements:

PRIVILEGES E-mail notification of changes to associated Dimensions RM requirements requires the following to be applicable:

1. For all users who wish to receive notifications, the administrator must have previously set up through the Administration Console:

   a An e-mail subscription to the event 'Someone has made a change to a Requirement related to a Request pending for me'.

   b The granting of the product-level privilege: "Perform Requirement Related Operation" (`PRODUCT_REQUIREMENTMAN`).

2. The subscribing, privileged Dimensions CM users must have pending requests that are related to requirements.

It is possible to use the Dimensions CM e-mail notification utility `dmemail` (see the "Managing Notification E-Mail" appendix in the *Process Modeling User's Guide*) to notify users of changes to associated Dimensions RM requirements. For example: when requirements are added to or removed from a collection; when collections are associated or unassociated from a Dimensions CM project/stream; or when requirements (contained in an associated collection) are updated or replaced.

In addition to the administrator setting up e-mail subscriptions and privileges, he or she must have edited the following configuration files:

- email_config.dat

  This configuration file (located in `%DM_ROOT%\dfs` (Windows) or `$DM_ROOT/dfs` (UNIX)) contains settings specific to `dmemail` and its entries are discussed in the "Managing Notification E-Mail" appendix in the *Process Modeling User's Guide.* However, when dealing with associated Dimensions RM requirements, some settings need to be added to the section concerned with databases for `dmemail` to process, for example:

  ```
  host = <Dimensions CM_host_name>
  dmuser = <Dimensions CM_System_Administrator_User_ID>
  ```

  By default, `<Dimensions CM_System_Administrator_User_ID>` will be `dmsys`.

- dm.cfg

  This configuration file (located in `%DM_ROOT%` (Windows) or `$DM_ROOT` (UNIX)) must have been edited to schedule dmemail. This is discussed in the "Managing Notification E-Mail" appendix in the *Process Modeling User's Guide*.

To start a Dimensions RM session:

1. On the Items tab, Projects/Streams tab, or Baselines tab, click the **More** button: and select **Requirements ...**

   The Dimensions RM Browser window main window appears (accessed through the Dimensions RM integration). Consult the associated online help or Dimensions RM book for details on how to use Dimensions RM.

2. When you have finished, close the Dimensions RM main window to return to the Dimensions web client.

Desktop client

To select requirements:

NOTE When displaying requirements in the desktop client, descriptions that were entered in HTML in Dimensions RM do not display correctly in desktop client.

1. In the My Current Project or My Current Stream window, expand the Catalog node and select the Requirements node Requirements

   To view the requirements in a container of requirements, expand the Requirements node and click the appropriate node, for example, a collection: or a baseline:

2. In the content window, select one or more requirements.

To edit the details of a Requirement:

PRIVILEGES To edit requirements requires the following privilege: "Perform Requirement Related Operation" (`PRODUCT_REQUIREMENTMAN`).

1. Select a requirement in the content area.

2. Right-click the requirement name and select **Open** or double-click the requirement name.

   The Dimensions RM Browser window **Edit Attributes** dialog box appears (through the Dimensions RM integration). Consult the associated online help or Dimensions RM book for details on how to edit the attributes using this dialog box.

3 When you have finished, exit to return to the Dimensions CM desktop client.

To relate a requirement to an existing request:

1 Select a requirement.

2 Right-click the requirement and select **Relate/Unrelate**.

The **Manage Relationships** dialog box appears.

NOTE When creating a baseline, you can also scope it by Requirement rather than Request. See "Creating a baseline that contains requests and requirements:" on page 27.

To create a new request to relate to a selected requirement:

1 Select a requirement.

2 Right-click the requirement and select **New Request**. The **New request** dialog box appears.

3 In the **New request** dialog box, enter the new request details in the relevant fields in the General, Relationship, Attributes, and Attachments tabs. The **Related requirements** field on the Relationships tab will be pre-populated with the selected requirement.

NOTE When creating a baseline, you can also scope it by Requirement rather than Request. See "Creating a baseline that contains requests and requirements:" on page 27.

Creating a baseline that contains requests and requirements:

If your items are used in builds, once requirements have been linked to requests and the work for those requests has been completed, a baseline should be created for all the items before they are used in the build. You will want to create the baseline using the requirements that were worked on for this build and project milestone. The creation of this baseline ensures the specific version of requirements, requests, and items are associated. The creation of this baseline in Dimensions CM also creates a baseline in Dimensions RM with the same name that contains the requirements that were linked or associated to the requests. The baseline in Dimensions RM will be associated with the Dimensions CM baseline that was created.

1 To create a baseline in Dimensions CM that contains the requests and requirements, you must first create the Request Baseline Template in the Dimensions CM Administration Console. This must be done before attempting to create the baseline in Dimensions CM.

2 Select a requirement.

3 Right-click the requirement and select **New Baseline**. The New Baseline dialog box appears.

4 In the New Baseline dialog box, enter the new baseline details in the relevant fields in the General, Attributes, and Relationship tabs.

When creating the baseline in Dimensions CM, you need to specify the requirements to use for the baseline. This is done through the Relationships tab. Click the **Requirement** radio button and then enter the requirement PUIDs that will be part of the baseline (the PUID numbers can be browsed). A PUID is just a unique identifier of a requirement in Dimensions RM.

5 The **Requirements** field on the Relationships tab will, of course, be pre-populated with the selected requirement.

6 Click **OK**.

When the action is complete, a baseline in Dimensions CM and a baseline in Dimensions RM are created. The baseline in Dimensions CM will contain all objects (items, requests, and requirements) and the baseline in Dimensions RM will contain the requirements.

Notifying Dimensions CM users of changes to associated Dimensions RM requirements:

PRIVILEGES E-mail notification of changes to associated Dimensions RM requirements requires the following to be applicable:

1. For all users who wish to receive notifications, the administrator must have previously set up through the Administration Console:
   - **a** An e-mail subscription to the event 'Someone has made a change to a Requirement related to a Request pending for me'.
   - **b** The granting of the product-level privilege: "Perform Requirement Related Operation" (`PRODUCT_REQUIREMENTMAN`).
2. The subscribing, privileged Dimensions CM users must have pending requests that are related to requirements.

It is possible to use the Dimensions CM e-mail notification utility `dmemail` (see the "Managing Notification E-Mail" appendix in the *Process Modeling User's Guide*) to notify users of changes to associated Dimensions RM requirements. For example: when requirements are added to or removed from a collection; when collections are associated or unassociated from a Dimensions CM project/stream; or when requirements (contained in an associated collection) are updated or replaced.

In addition to the administrator setting up e-mail subscriptions and privileges, he or she must have edited the following configuration files:

- email_config.dat

  This configuration file (located in `%DM_ROOT%\dfs` (Windows) or `$DM_ROOT/dfs` (UNIX)) contains settings specific to `dmemail` and its entries are discussed in the "Managing Notification E-Mail" appendix in the *Process Modeling User's Guide.* However, when dealing with associated Dimensions RM requirements, some settings that are specific to Dimensions RM need to be added to the section concerned with databases for `dmemail` to process, for example:

  ```
  host = <Dimensions CM_host_name>
  dmuser = <Dimensions CM_System_Administrator_User_ID>
  ```

  By default, `<Dimensions CM_System_Administrator_User_ID>` will be `dmsys`.

- dm.cfg

  This configuration file (located in `%DM_ROOT%` (Windows) or `$DM_ROOT` (UNIX)) must have been edited to schedule dmemail. This is discussed in the "Managing Notification E-Mail" appendix in the *Process Modeling User's Guide*.

To start a Dimensions RM session:

1. Select Tools | Requirements Management.

   The Dimensions RM Browser window main window appears (accessed through the Dimensions RM integration). Consult the associated online help or Dimensions RM books for details on how to use Dimensions RM.

2 When you have finished, close the Dimensions RM main window to return to the Dimensions CM desktop client.

Dimensions CM Web Client Select Requirement Wizard (Page 1 of 2)

Use this wizard to select requirements when relating them to currently selected requests.

Use the first page of the wizard to set the filtering criteria for the requirements you wish to list. You can specify that only requirements matching the specified criteria are to be shown.

See Dimensions CM Web Client Select Requirement Wizard (Page 2 of 2) for selecting the requirements from the resulting list.

Select Requirement Wizard - First Page

Field	Description	Rules and Guidelines

ID	Type the requirement puid.	The requirement specification comprises:
		`<class_name>.<puid>;objID`
		For example:
		`Marketing_Requirement.MRTK 000024;4`
		You can use wildcards in this field:
		▪ Use an asterisk (*) or percent sign (%) to match any number of characters. For example, d*g matches dog or drag or dreaming.

Status	Type the requirement status. For example, Replaced or Current.	You can use wildcards in this field.

Class	Type the requirement class name.	The requirement specification comprises:
		`<class_name>.<puid>;objID`
		For example:
		`Marketing_Requirement.MRTK 000024;4`
		You can use wildcards in this field.

Field	Description	Rules and Guidelines

Object ID	Type the requirement Object ID.	The requirement specification comprises:
		`<class_name>.<puid>;objID`
		For example:
		`Marketing_Requirement.MRTK 000024;4`
		You **cannot** use wildcards in this field.

Title	Type the requirement title.	You can use wildcards in this field.
Description	Type the requirement description.	You can use wildcards in this field.
Next	Click to move to the second page of the wizard.	

Dimensions CM Web Client Select Requirement Wizard (Page 2 of 2)

Use this wizard to select requirements.

The second page of the wizard displays the requirements that match the criteria you entered on the first page of the wizard. From these results, you select requirements, which you then see in the dialog box from which you originally launched the wizard.

Some operations allow only a single requirement to be selected. These operations display radio buttons, rather than check boxes, in the first column.

Select Requirement Wizard - Second Page

Field	Description	Rules and Guidelines
Select check boxes	Select the Requirements.	
Container Name	The container name.	Display only. Existing relationships will not have a container name associated with them.
Class	The requirement class.	Display only.
ID	The requirement ID.	Display only.
Object ID	The requirement object ID.	Display only.
Title	The requirement title	
RM Project	The associated Dimensions RM project.	Display only.
RM Database	The associated Dimensions RM database.	Display only.

Field	Description	Rules and Guidelines
RM URL	The associated RM Browser URL.	Display only.
Container Type	The type of container (baseline, collection, document, or snapshot).	Display only.
Status	The status of the requirement.	Display only.
Originator	The Dimensions RM user who originator of the requirement.	Display only.
Create date	The date this requirement was created.	Display only.
Update date	The date of the last change to this requirement.	Display only.
Back	Click to return to the first page of the wizard.	
Finish	Click to save your selection.	

Chapter 3

Configuring an IIS Server for ALM Integration

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Configuring an IIS Server for ALM Integration

If you are in a highly secure Serena® Dimensions® CM plus Serena® Dimensions® RM environment that utilizes a Microsoft® IIS server, you should configure that IIS server for the ALM integration. Perform the procedures in this chapter on the server where you have IIS running.

IMPORTANT! The IUSR account needs access to the Dimensions CM installation directory. Normally, the Dimensions CM tool manager account is `dmsys`, unless you created your own account and named it something else. This procedure assumes that the tool manager account is `dmsys`.

Configuring Dimensions RM

To configure the IIS server for Dimensions RM:

1. In Windows Explorer, select the Dimensions RM "root" folder. By default, this will be:

   ```
   C:\Program Files\Serena\Dimensions <version>\RM
   ```

2. Right-click and select `Properties | Security`.
3. Click **Add**.
4. Add `dmsys` to the list of groups and users.
5. Select the user dmsys and check **Allow** for the **Read & Execute** and **Write** check boxes in **Permissions for dmsys**.
6. Click **Advance**.
7. The **Advanced Security Settings for RM** dialog box appears with the Permissions tab selected. Proceed as follows:
   - **a** Select the `dmsys` user.
   - **b** Check both check boxes at the bottom of the dialog box.
   - **c** Click **Apply**.
   - **d** Once the security updates have completed, click **OK** and **OK** to exit the dialog boxes.
8. Reboot the IIS server.

Configuring Dimensions CM

To configure the IIS server for Dimensions CM:

1. In Windows Explorer, select the Dimensions RM "root" folder. By default, this will be:

   ```
   C:\Program Files\Serena\Dimensions <version>\CM
   ```

2. Right-click and select `Properties | Security`.
3. Click **Add**.
4. Add the IUSR account (`<serverName>\IUSR_<serverName>`) to the list of groups and users.

5. Select the user `<serverName>\IUSR_<serverName>` and check **Allow** for the **Read & Execute** and **Write** check boxes in **Permissions for serverName>\IUSR_<serverName>**.
6. Click **Advance**.
7. The **Advanced Security Settings for CM** dialog box appears with the Permissions tab selected. Proceed as follows:
   - **a** Select the `<serverName>\IUSR_<serverName>` user.
   - **b** Check both check boxes at the bottom of the dialog box.
   - **c** Click **Apply**.
   - **d** Once the security updates have completed, click **OK** and **OK** to exit the dialog boxes.
8. Reboot the IIS server.

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